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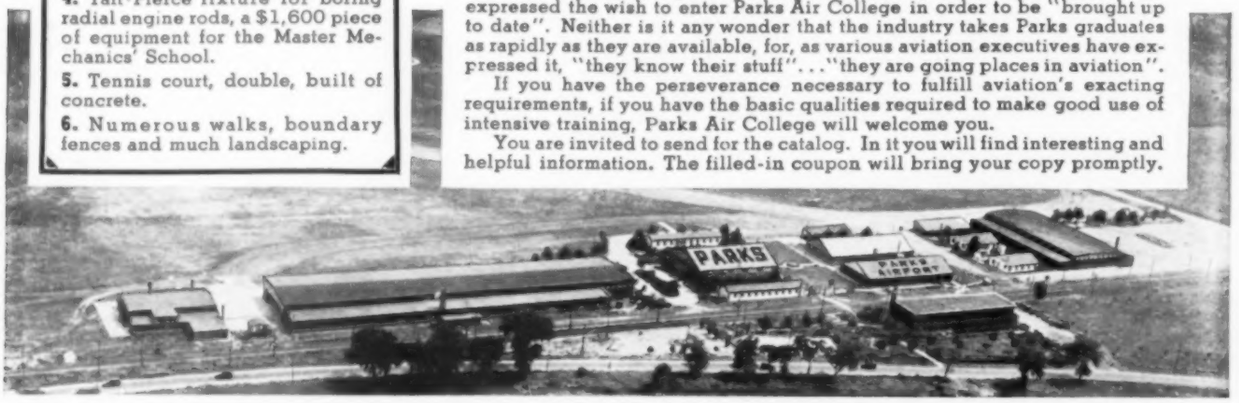

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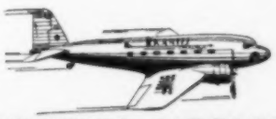

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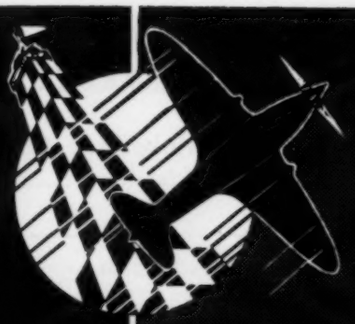

1937

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Sept. 3-4-5-6

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Southern Flight

The Complete Monthly Digest of Aeronautics in The South and Southwest

AUGUST, 1937 VOL. VIII. NO. 2

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The Cover:

Pictorial record of "Skysleeper" flight.

In June, Transcontinental & Western Air, Inc., introduced a fleet of Douglas DST airplanes over its coast to coast route on a 15 hours and 10 minutes eastbound schedule and a 17 hours and 4 minutes westbound schedule.

While licensed to carry 25 passengers, the "Skysleeper" on overnight flights carries only 17 passengers in order to provide a maximum of comfort and luxury. Power is furnished by two Wright G-100 Cyclones. Sperry Automatic Pilots are standard equipment.

★ ★ ★ ★ ★ Just Among Ourselves ★ ★ ★ ★ ★

Tough Spot

NOW that the McCarran-Lea bill has been pigeonholed until the next session of Congress, it appears the Post Office Department will spend considerable time and energy in a vigorous campaign to break down the power and morale of the forces working towards Interstate Commerce Commission control as provided by the pending bill. The Department's open enmity toward the bill, which would divest them of air line regulation, has been too bitter and too militant to cease now and they won't go down without a strenuous fight.

Since the chances for passage of the bill at the next session are most promising, as proved by a recent test vote in the Senate, we can expect the Post Office Department to use every political weapon and piece of propaganda available to defeat the legislation. No doubt we shall observe soon a dramatic display of their old tricks which include political trading, loose promises and constant confusion of the industry that must ostensibly cooperate with them but silently hope for I. C. C. control.

During the hearings in Washington, the Air Transport Association came out openly for the McCarran-Lea bill. Naturally they are now on the P. O. D.'s black list. The ATA leader is a "marked" man. His organization took the rap for the industry and during the ensuing months will have to take many more.

Hence it is that solidarity among all the air transport operators is an absolutely necessary factor in the campaign for enlightened legislation as provided in the McCarran bill, which guarantees stability and healthy growth of the industry and freedom from political pressure. Without complete unison on the battle front during the balance of the year under the ATA banner, what ground has been gained will of a certainty be lost before Congress convenes again.

Helium

HAPPY indeed is the news that Congress passed the bill permitting foreign governments to purchase helium from the United States for commercial use. This action is most timely now that the LZ-130, sister ship to the ill-fated *Hindenburg*, rapidly nears completion at her Friedrichshafen base.

Hence, what apparently is the final obstacle to safe international Zeppelin service has been hurdled. No longer will we read of the United States "refusing" helium gas to foreign commercial operators. And with the demise of inflammable hydrogen as a lifting agent, can we not expect the LZ-130 to revive confidence in lighter-than-air craft as a safe and necessary unit of the international air transportation systems?

Even in the face of the *Hindenburg* tragedy we cannot lose sight of her successful Atlantic crossings during her brief months of service. Crossing every five days each way, it was proved that an airship would give a return on capital of 7 per cent, without subsidy. At the present time Germany remains pathetically alone in continued airship development; and other nations, particularly the United States, might well absorb the "never-say-die" spirit of the Germans, who confidently know that had the *Hindenburg* been filled with helium, she would still be floating proudly between America and Germany.

Collision

TOO MANY major airports of the nation are without adequate traffic control facilities. Especially on those fields where a variety of flying takes place does the need for closer control appear evident. True, mid-air collisions are infrequent but closer supervision and proper equipment would practically annihilate the chances for such mishaps. Taxiing accidents can be minimized as well.

The Bureau of Air Commerce has minimum requirements that must be observed but it is up to local airport authority to provide equipment and supervise the traffic. The job can be accomplished without great cost or difficulty either to the field or the man at the ship controls. The manifold benefits to aviation are too self-evident to mention and may be observed at any of the progressive fields where traffic is handled with speed and safety through the use of modern equipment, simple rules and trained personnel.

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GUEST EDITORIAL

Edgar S. Gorrell

President, Air Transport Association of America

THE air line industry is going places, although small today in comparison with other industries. The domestic scheduled air lines in 1936 had gross revenues in the aggregate of less than $35,000,000. Montgomery Ward, not the largest in its field, grossed well over ten times as much as all of the domestic air lines combined. We, therefore, are obtaining publicity both favorable and unfavorable, somewhat out of proportion to our importance in the business world. Undoubtedly, we will grow to an extent within a short time many times beyond the imagination of the most optimistic prophet.

"Estimate your fondest hopes and your fondest dreams, multiply the answer so obtained by ten; then realize that your calculations will still be too small," so advised Marshal Joffre, the saviour of the Marne, when I asked him in 1917 how to estimate the possibilities of aviation.

I like to think of air transportation as a supplementary means of travel, rather than as a direct competitor of the busses, railroads and steamships. With our new four-engine planes, either on the drawing board or in production, it will be necessary to ship four engines per plane rather than two to West Coast factories from the East, where these engines are made. It is a little known fact that at Brownsville, Texas, in the territory of "Southern Flight," the engines used by Pan American Airways in Alaska and on the Pacific Division are overhauled. This means water-borne freight involving round trips, which would not otherwise be available to the steamship carrier. It is obvious to mention the many vacation travelers using rail, busses and automobile, which would not be so used if it were not for the partial use of air transportation during their vacation periods. It would be impossible for many on vacation to visit distant homes, national parks and resorts during the time allotment, were it not for air transportation, and, again, surface travel most frequently must be employed from and to the 201 air line terminals.

The record of the air lines, in the decade in which it has been a bona fide business, and I believe I am modest in making this claim, is better than that, from a safety viewpoint, of any other means of transportation. Due to the use of an additional dimension the air lines are potentially the safest medium of fast transportation.

They held the frontier day celebration in Cheyenne the other day during which the cowboys from all over the West and Southwest participated. It is significant that behind the grand stand of the fair grounds at Cheyenne, Wyoming, is the radio range station used by the air lines to orient airliners when visibility is poor

Col. Edgar S. Gorrell

upon arrival at Cheyenne, and for marking the direction of courses north, south, east and west. Seeing the five towers of this range station reminds me of the pony express. In 1865 it took ten and one-half days for the pony express to travel from St. Joseph, Missouri, to Sacramento, California. The air lines fly today from Chicago to California in approximately ten and one-half hours.

Indicative of the progress yet to be made by air transportation when business men realize its advantages, is an article in the August 1st issue of the "Sales Management" in which it shows by detailed tables that it costs real money for any business house to allow its men to take certain trips by surface means. This compilation, prepared by a business expert, contains the following statement:

"Going on up the income scale, we find that at the income rate of $1.00 an hour, the "dollar-hour" cost of the trip between Los Angeles and San Francisco is almost the same: $21 by bus, $20.47 by rail; and $20.95 by air. Beyond that point, however, air travel comes definitely into favor, with rail travel far below in second place. At $2 an hour, the trip costs $34 by bus, $34.47 by rail, $22.95 by air."

A Decade of Air Transportation

United Air Lines completes ten years of coast-to-coast flying—marks eighteenth anniversary of commercial air transportation between the Atlantic and Pacific oceans.

Bob Johnson

THE first decade of commercial coast-to-coast air transportation will be celebrated on September 1, exactly ten years after the first commercially operated mail and passenger planes flew their first schedules over the mid-continent New York-Chicago-California airway.

The celebration also marks the eighteenth anniversary of air mail service across the continent. It was in 1919 and 1920 that mail planes of the Postoffice Department pioneered this airway and gave the route seven years of operation before the predecessor companies of United Air Lines linked the Atlantic and Pacific seaboards with the nation's first cross-continent commercial service. In fact it was only after the Postoffice Department had clearly demonstrated the effectiveness of scheduled air transportation across the continent over this specially-selected route, that it was decided to establish a commercial route by advertising the airway for private operation to the lowest competitive bidder.

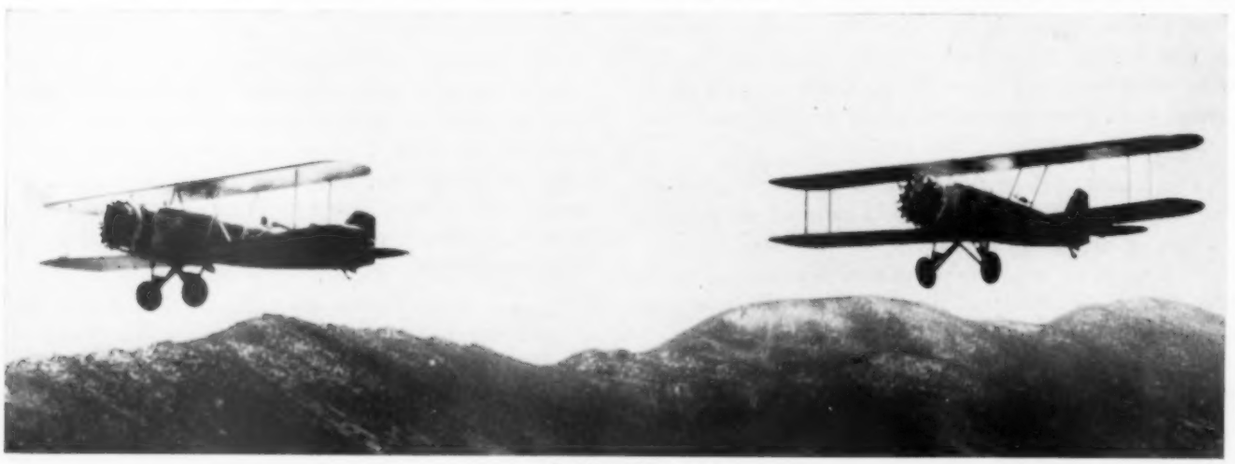
During the first part of 1927, Boeing Air Transport was awarded the Chicago-San Francisco contract with its operations to start on July 1. Meanwhile, National Air Transport was successful in bidding for the Chicago-New York portion of the coast-to-coast airway with its service to begin on September 1. With the award of the contracts, these two predecessor divisions of United Air Lines set to the task of lifting scheduled air transportation to the realms of big business. Ten years later it is apparent that their work was done so efficiently that the New York-Chicago-California airway holds the record of having served more passenger traffic, and of having flown more airplane miles and more traffic ton miles than have ever been recorded over any other long distance airway in the world.

In the sharp contrast to the pioneer flights of the first days of operation are the luxurious overnight sleeper plane and daylight skylounge Mainliner trips which link California and New York in less than half the time required for the flights of a decade ago. In ten years' time a total of 1,075,359 passengers, 42,357,951 pounds of mail and 8,039,927 pounds of air express have been carried over United's U. S. AM-1, the official designation of the airway from New York to California.

During this ten years of progress came a series of airplane fleets which typify the tremendous advances that have been made in flying equipment during the first decade of commercial air transportation. This period has seen the famous mid-continent route grow from a pioneering enterprise to one of the most scientifically developed airways in the world. It has served as a model air route which even foreign operators have studied as a pattern for their lines.

No air route in the nation embraces such romantic history as does the mid-continent airway. It is most interesting, perhaps, because its ancestry dates back through the Postoffice Department's pioneering days to the first traces of the old Overland Trail of more than a hundred years ago. The air route was laid out by Government engineers who claimed it as being the most advantageous coast-to-coast airway at a time when the nation could support but one line across the continent. Its path has been the main life line of transportation between east and west. It has been the path of the Covered Wagon, Pony Express, the Iron Horse, the first coast-to-coast telegraph and the first transcontinental highway. Potent, too, is this airway because its geographical location bisects the continent and provides a central coast-to-coast course serving the main population centers of the United States.

The first step in setting up a complete coast-to-coast service was taken on July 1, 1926, when the Boeing Air Transport Division of United Air Lines started an operation between Chicago and San Francisco which many had predicted would prove financially disastrous. The company's bid for mail carriage was unusually low and, as such, was challenged by other companies who claimed the operation would be impossible at such a low rate of income. But these critics had not weighed the value and business genius of United's three leaders, W. E. Boeing, Philip G. Johnson and Edward Hubbard. With



Ten Years Ago

These 426 h.p. singled engined Boeing 40s operated over the coast-to-coast route in a 33 hours service, carrying two passengers, pilot and cargo. With a cruising range of 380 miles, the 40s cruised at 105 m.p.h. and it cost a transcontinental passenger $400 for a ticket that today costs but $149.50.

Today

A fleet of United's Douglas Mainliners span the continent on a regular schedule of 15 1/3 hours with but three stops. Last month United Air Lines ordered an additional fleet of ten Mainliners, boosting their total to seventy operating units which include the well-known Boeing 247-D type.

years of air line operation as his background, Mr. Hubbard was principally responsible for the instant success of Boeing Air Transport's operation. He died after a brief illness a short year and a half after the beginning of this air service.

In building a sound organization the first move was to assemble a strong personnel. The Postoffice Department furnished many men who had not only been operating the planes but also the ground facilities of the route during the pioneering era.

Exactly 150 days elapsed between February 1, 1927, the day the Chicago-San Francisco contract was signed, and July 1, 1927, the day service on this route was started. During this period engineers of the Boeing Airplane Company at Seattle designed and built a fleet of twenty-four single-engined biplanes, the first specially built mail-passenger planes to be placed in service.

These ships were the well-known Boeing 40s, with a two-passenger compartment fitted in the fuselage between the mail pits and an open cockpit for the pilot. The 40s were at first powered with Wasp engines. Later Hornets were installed, giving the fleet a cruising speed of 105 miles an hour and a cruising range of 380 miles.

While the Pacific Coast was buzzing with this aeronautical activity, the National Air Transport division of United was completing its plans to bind the coast-to-coast air service on September 1. NAT enjoyed a definite advantage, however, since it had been operating the Chicago-Dallas air line under Postoffice Department contract since May 12, 1926, and its organization was well established. On September 1, 1927, the coast-to-coast picture was complete with NAT inaugurating the Chicago-New York portion of the airway.

Since most of the planes were primarily equipped to carry air mail, the pioneering passenger was more or less secondary to a sack of mail. He paid $400 for his through ticket and what he received in return seems comparatively little when contrasted with today's fare of $149.50 for a ticket that entitles one to a service unsurpassed in transportation throughout the world.

THE structure of the air line was founded upon air mail and was operated by men whose experience had been in the field of mail. The 1927 passenger's flight was not a particularly pleasant one. The journey required thirty-three hours and the passenger invariably arrived on the opposite fatigued and hungry, but with the satisfaction that he had completed an adventure experienced by few of his fellow men.

Unlike the Mainliners of today, the Boeing 40s flew at comparatively low elevations where rough air prevailed. The engines were not supercharged for efficient operation at high altitudes. Even if they were it would not have been economical to climb very high with land only a short distance ahead. Today the Mainliners fly at 10,000 feet where smooth air is the rule.

1937 finds that United Air Lines has a special Passenger Service Department that skillfully anticipates every passenger need. The only evidence of passenger service in 1927 was a box lunch that was placed aboard the plane only after air line officials realized that passengers flying from coast-to-coast in 33 hours became hungry sooner or later. Today there is a stewardess to serve hot, full course complimentary meals in a bright, air-conditioned cabin.

Soon after the transcontinental service was under way,

(Continued on Page 26)

THE MEET ON HARRIS HILL

The 1937 gliding and soaring competition at Elmira gave forcible proof of valuable contributions being made by motorless flight to aerodynamic science.

Jay Buxton

THE soaring contest at Elmira this year marked the first time in the history of the competition that utility glider entries took a seat in the far back row. Year after year in the past utility pilots have managed to refine their gliders enough so that with superior flying skill they could out perform the more aerodynamically refined sail planes. This largely came about due to the great amount of familiarity the utility pilots had with their craft while the sailplane operators were for the most part lacking in ability and practice in getting the ultimate high performance from their machines.

Weather also played an ace role to determine the outcome of the contest. Thunderstorms, rain, and sudden blows were frequent and good soaring weather came seldom and for a short time. This was the great contributing factor to the frequent crashes that were confined to the low performance machines. The pilots would persist in hanging on after the wind died out and while trying to soar when they should have been gliding they would attempt slow turns for air that wasn't there and spin in. In eleven such crashes no one was badly injured except for one pilot who suffered broken legs. There were no structural failures during the contest. Poor flying weather also kept the utility gliders on the ground for a greater part of the contest.

Spectators at Elmira this year saw many new and novel sailplanes as well as some unique maneuvering technique. There was much open-mouthed gaping at Harlan Ross with his little sailplane as he circled around for hours at two to five thousand feet altitude in apparently dead air that was certainly none too warm to supply a lifting thermal. Equally amazing was Peter Reidel, the German entry, in his German Sperber Sr. as he disappeared in the distance turning tight spirals that last year would have been accepted as stunting but today recognized as the efficient method of squeezing all the lift out of weak thermals. Spectacular, too, was the flight of Richard du Pont during a thunderstorm. The sight of the sailplane darting in and out of the black storm clouds stabbed here and there by streaks of lightning made the other pilots glad they were on the ground despite the unpleasantness of the rain and wind gusts.

Ted Delac has always drawn a smile from his listeners when he mentioned his "man made thermals" but Dick du Pont successfully tried the technique five times during the meet which tended to eliminate the coincidence argument. Belac contended that when conditions were ideal for thermals but none in evidence as he circled lower and lower he would put his plane into a very tight spiral for several turns, level off, and then return through the center of the spiral. By such maneuvering he would "bust a thermal loose" and get lift, which sometimes carried him to considerable altitudes. It is possible that such an action set up a vortex motion which would really set a large mass of slowly rising heated air into a more concentrated column of rapidly rising air.

Pleasing to the pilots was the friendly interest shown by the National Aeronautic Association and in their understanding of the great value of soaring flight to per-

Upper: Left to Right: Dick duPont's cleanly designed "Minimoa," Champ Riedel's "Sperber Sr.," and Decker's Bowlus "Albatross."

Center: The Lithuanian pilots, Bronius Oskinis, Kurt Seimon and Jonas Pyragius with latters' stunt ship in the foreground, Oskinis' "Minimoa" behind. RURA BIRIETIS on fuselage is name of their home town.

Lower: Ross-Stephens high performance sail plane that took second place in the Mrs. Warren Eaton Design Contest.

fecting power flying technique and of the sporting possibilities of the art. Also interesting was the efforts of the pilots in suggesting to Air Commerce officials that more exacting tests and experience be required for a commercial glider license.

The Warren Eaton glider design contest was surprising in that of six ships entered there was little or no similarity. The A B C sailplane which took first money is a highly desirable general-purpose sailplane. The Ross Stephens, an ideal, small, high performance sailplane, took second place. The Sweitzer all-metal utility took third money and marked the way for more all-metal aircraft. There was also a good two seater and a neat little biplane glider that arrived late.

Outstanding added features of the meet were the antics of the two affable Lithuanians, Bronius Oskinis and Jonas Pyragius, who gave scintillating displays of aerobatic feats in Oskinis' special sailplane. They put the little ship through many difficult maneuvers, including inverted flight, half-rolls, wing-overs and loops. The ship is of Oskinis' own design and construction and is reported to be capable of withstanding dives of over 200 m. p. h. The designer is vice-president of the Aero Club of Lithuania while his compatriot Pyragius is president.

Statistically speaking there were 126 pilots entered at Elmira and three of them were women. There were 52 gliders, six of which were German and two American high performance sailplanes. There were 669 launchings, 86 being the greatest number from Harris Hill in one day. A total distance of 2,223 miles were flown not counting flights under seven miles in length. Total soaring time of flights over one hour amounted to 242 hours.

A story in itself is that of the adventure and hardships that come with transporting a glider overland across the continent. It deals with blinding dust storms, pouring rains, mountain wash-outs, bent axles, and hail storms that render destruction. The California entrants felt they well earned the few scant flying hours that the weather at Elmira permitted them. There was some satisfaction gained, however, when the Buxton Transporter placed first in the competition for the American La-France trophy for multi-seater gliders exclusively. Fred Barnes was at the controls.

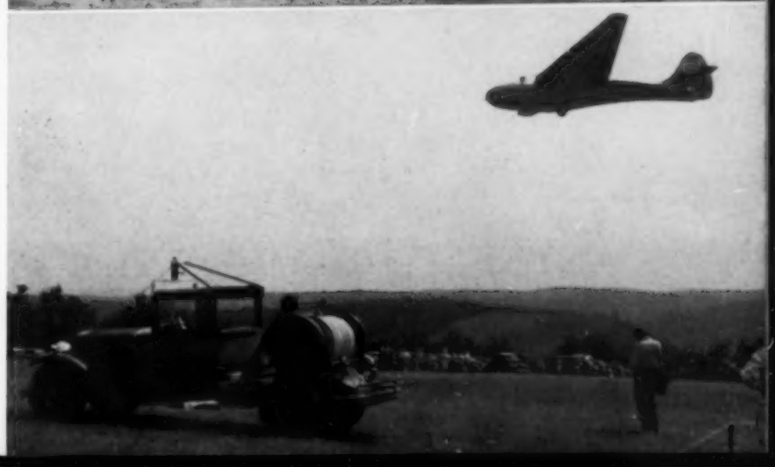
On their return from Elmira the gliding fraternity staged a banquet at Los Angeles which was attended by glider enthusiasts and aviation officials. As a result a glider meet is to be held September 4, 5, and 6 near Bakersfield. Seventeen gliders in all are expected to participate.

POINTS AWARDED TO PILOTS FOR CONTEST PERFORMANCES

Peter Riedel, 196; Richard duPont, 182; Chester J. Decker, 178; Emil Lehecka, 178; Harland Ross, 172; Lewin Barringer, 171; Robert Auburn, 150; Arthur Schultz, 142; Charles Tubbs, 101; Bronius Oskinis, 88; Youston Sekella, 55; Floyd Sweet, 47; Theodore Bellak, 47; Allen Rooke, 42; Fred Barnes, 40; Douglas Hugill, 32; Felix Chardon, 29; J. C. Nees, 25; Arthur Hoffman, 23; Cleveland Hyde, 22; Udo Fischer, 22; Stanley Corcoran, 18; Donald Davis, 17; William Dolger, 16; Ben Badenoch, 16; Wistar Brown, 15; John Wallace, Rudolph Thoren, Daniel Sanborn, Laura Brunton, Louis DuBois, and Elery Clark, 12 each; William Placek, 11; Nelson Shapter, 11; Henry Wightman, 10; Lewis Hull, 10; Dana Darling, Clinton Janes, and Randolph Chapman, 9; Robert Eichenberry, 8; Robert Newcomb, 6; Donald Lawrence, 5; Stephen Orban, Welcome Bender, John Ford, Russell Heyl, John Noyes, Lewis McNitt, Edward Replogle, Allen Donovan, 4; William Stevens, 2.

POINTS AWARDED TO SHIPS FOR PERFORMANCES

Sperber Senior, Peter Riedel, 151; Albatross, Chester Decker, 136; Minimoa, Lewin Barringer, 127; Minimoa, Richard duPont, 126; Ross-Stephens, Harvey Stephens, 124; ABC Sailplane, Arthur Schultz, 106; "Sun Spot," Robert Auburn, 81; Minimoa, Aero Club of Lithuania, 64; SGU-1, Paul and Ernest Schweizer, 50; Rhonbuzzard, Elmira Association of Commerce, 42; Cadet, Nelson Shapter, 41; Transporter, Jay Buxton, 33; Franklin, U. of M., 27; Cadet, Airhoppers, 21; Longwing Franklin, George Armitage, 21; Franklin, Felix Chardon, 15; Taperwing Franklin, M.I.T., 15; Franklin, M.I.T., 14; Franklin, Airhoppers, 13; Cadet, Joseph Thoren, 9; Grunau-8, Daniel Sanborn, 9; H.C., Stanley Corcoran, Louis Harper, 9; Prufling, Airhoppers, 8; Stevens Franklin, Wings Soaring Club, 7; Franklin, Gustav Scheurer, 6; Franklin, M.I.T., 6; L.I.T. 2-place, Lawrence Tech., 5; Franklin, R. E. Franklin, 5; Franklin, Elmira Gliding Club, 5; duPont, Henry Wightman, 5; Franklin, U. of M., 4; Cadet, Donald Lawrence, 3.



Upper: The Lithuanian Pyragius' stunt ship at close range.
Center: The Elmira Glider Club's german built ship.
Lower: Douglas Hugill coming in for a landing in the author's Buxton two-place "Transporter." The M. I. T. winch shown in the photo worked exceptionally well in launching gliders during the meet.

Snow Static Effects On Aircraft

Part II

A report on United Air Lines' study of the Problem of Snow Static as it affects aircraft radio reception and a discussion of methods being developed to counteract snow static.

By H. M. HUCKE

The Generation of Static On the Plane

IF a plane slowly climbs up through a cloud in which the charged droplets are uniformly distributed and in electro-static equilibrium no snow static disturbance is heard in radio. As it climbs, however, it must rise from an area of one charge to an area of greater charge with respect to the earth. The plane is, in effect, a large metal body which may have on its surface an electro-static charge in the same manner as the earth has a charge. The charge in the atmosphere immediately around the plane must, therefore, gradually increase as it climbs upward and decreases when it glides downward.

With a sharp two-foot steel point projecting from the rear of the plane discharges up to 10 or 15 micro-amperes have been measured while ascending or descending through charged fog particles. No static was heard in this condition. As long as the charging and discharging of the plane does not exceed a certain rate no static is heard. Since there must be a difference of potentials between the plane and surrounding atmosphere before discharge can take place, it is apparent that the plane must exceed a certain potential before static is heard.

In such a condition the 40 foot short wave antenna on top of the plane gave no noticeable static in the short wave receiver until a continuous current flow of 2 micro-amperes was exceeded. The receiver had a one-half megohm resistor across the antenna input through which this current flowed. The DC voltage drop across this register was therefore one volt but the ripple superimposed on this DC voltage must have been only a few microvolts if it was of a random nature. Thus the noise in the receiver is caused by the random variation of the discharge flow rather than the total discharge.

Whenever the discharge from the steel point or antenna exceeded a certain rather broad maximum, the characteristic snow static sounds were heard in the radio.

A series of points were installed on the plane to learn the distribution of this discharge. These were arranged on the nose, tail, each wing, behind the exhaust outlet, behind the propeller, and at four points along the plane belly. The points were connected in a number of group arrangements to vacuum tube electrometers. The electrometers were in turn connected to paper recorders. Recordings were made in a variety of cloud formations over a period of eight weeks. It is of interest to note that at a speed of 180 miles an hour the variation in charge on the plane is so rapid that it is impossible to make a record of it with the usual notebook and pencil. Automatic recording devices are the only means by which a useable record can be obtained.

A grouping of these points suggested by Professor Starr gave the most orderly results. This group consisted of a pointed 2 foot rod in the disturbed air at the tail, a pointed 2 foot rod on the nose projecting into the undisturbed air ahead of the plane and a plate on the nose to record the impacting water particles.

A study of our data on all the points has resulted in the following conclusions:

1. That the plane may be either positive or negative with respect to the surrounding cloud.
2. That at any instant one wing may be in positive cloud particles while the other is in negative.
3. That at any instant the nose of the plane may be in positive particles while the tail is in negative or vice versa.

The maximum cross-flow measured from wing to wing was about 500 microamperes though undoubtedly larger flows are possible. The maximum would constitute a stroke of lightning. There are many records of lightning strikes on all-metal planes which indicate wing to wing flows of several thousand amperes. During our flights we encountered one condition in a thundercloud in which the plane's magnetic compass moved 10 degrees with respect to the gyro-compass for a period of several minutes. This may have been due to a strong magnetic field in the cloud or to a cross flow of current in the plane structure. Ground tests indicated that a wing to wing flow of about 45 DC amperes was required to produce the same compass deviation. A nose to tail current of 125 amperes produced the same effect. This would vary with the position of the plane with respect to the earth's magnetic field. Further tests with special wing constructions are needed to establish the magnitude of current flow through the plane.

It is known that a negatively charged point will go into corona about 50 per cent more readily than a positively charged point. It is also known that the action of the propeller in cutting up water particles at a top speed of 800 feet per second will produce an electric charge. It is reasonable to believe that the wing of a plane moving at 260 feet per second will break up water particles and produce a charge. The electric charge recordings are, therefore, the summation of at least 6 variables.

1. The plus or minus charges of the water particles in the cloud which are collected by the wing foil.
2. The generation of charge due to the wing sections splitting water particles.
3. The generation of charge due to the propeller splitting water particles.
4. Foreign matter in the water particles (Portland, Oregon, tap water split by the rotating propeller gives a positive charge while Cheyenne, Wyoming, tap water gives a negative charge).
5. The rectification action of the test points with different polarity of the plane charge.
6. Cross current flows due to the plane short circuiting sections of cloud having different potentials.

From the above it is obvious that the mechanism by which the plane gathers an electro-static charge is quite complex. Rather than spend valuable flight time trying to reach an orderly conclusion from this group of variables, it was believed best to proceed on to possible solution. In any case, it appeared probable that whether the plane became plus or minus it eventually reached a sufficiently high potential for corona discharges to appear on wing tips or any sharp projecting points. As a check on this assumption a cathode oscillograph connected to any of the test points gave typical corona discharge tracings whenever the characteristic sounds were heard in the plane radio.

The plane was charged up by a small Wimshurst machine while standing on the ground and by bringing a pointed ground wire near its structure, the characteristic snow static sounds could be duplicated. Since this experiment was limited by the installation of the rubber tires, the AC modulation of the Wimshurst disk and the general variability of such a generator, a more substantial arrangement was desirable. Through the courtesy of the Westinghouse Company and Stanford University, we were able to borrow high voltage insulators and assemble a 100,000 volt DC ray power supply. The plane was set up on these insulators in a large metal hangar and charged up to either plus or minus 100,000 volts. With this arrangement engineers could remain inside the all-metal plane with all radio equipment operating and use the test equipment in the same manner as was possible in flight. The tests further substantiated the corona discharge theory. The power was sufficient to make the anti-static loops and regular antennas inoperative in the same general ratio as had been observed on the test flights. The characteristic snow static sounds were present.

Static noise in the receivers with regular antennas began as low as 30,000 volts, depending upon local humidity and the proximity of the artificial ground plane to the various points on the plane. The "crying" snow static sounds usually began at about 55,000 volts and occurred more readily when the plane was positive with respect to ground. This crying phenomena was readily traced to a corona discharge from some point on the plane. Artificial points were set up for its study and we concluded that the space charge in the ionized air around the point breaks down at an audio frequency rate. This rate varies with the amount of moisture in the air and the voltage gradient at the point. Under controlled conditions it will produce any audio frequency note. For example, on one test the noise produced followed the following order:

55,000 volts noise like frying bacon,
60,000 frying noise begins to pulse at about 10 cycles per second.
62,000 frying noise pulses at 100 cycles.
64,000 frying noise pulses at 500 cycles.
66,000 frying noise pulses at 2000 cycles.
68,000 frying noise pulses at 8000 cycles.
70,000 frying noise pulses at 15000 cycles.
72,000 frying noise pulses at above audibility.

At about this point some other point on the plane begins the same sounds and goes on up through the musical scale.

At any one time it will be possible for a number of points to produce this musical corona in any order. This, then, is the cause of the characteristic snow static sound.

A study of the plane structure indicates that antenna masts, rivet heads, cotter keys, on aileron hinges and tail wheels, the antennas themselves and any sharp points on the plane are the focal points of the corona discharges and consequently the source of snow static radio interference while in flight.

Unless these discharge points are quieted snow static cannot be eliminated. Covering them with an insulator, reducing their sharpness, or covering them with a well-rounded corona shield will only allow the plane to build up to a still higher potential until some other point starts corona.

There are two solutions open: 1, reduce the ability of the plane to gather or generate charges, and 2, admit that the plane cannot be prevented from gathering charges and work out a means for discharging it which will not cause radio interference.

The second solution offered the best possibilities although several plans for accomplishing the first will shortly be tested. It is probable that a partial solution of both will eventually be used.

A study of the noise indicates that it has a very short wave length and that its attenuation with distance is rapid. The field pattern caused by a point in the corona at the rear of the airplane was sketched. The area of interference production is continuous with the trailing edges of the airplane. When a resistor was added in series with the point the interference was materially reduced by a change in the noise field pattern to a location in the rear of the airplane and comparatively isolated from it. Curves on resistors indicate that at least 100,000 ohms and in some cases up to 10 megohms are necessary. Moving the point away from the plane takes advantage of the rapid attenuation and gives a better pattern.

This indicated that a trailing discharging point as far as possible behind the plane with suitable suppressor

Left: Various types of anti-static aircraft antenna developed by United engineers and installed on the company's flying laboratory 247-D. N. E. Klein and H. W. DeWeese, United Technicians, are shown inspecting the equipment. Right: The TWA loop antenna adapted last year to solve the rain and dust problem was originally placed on top of the fuselage about six feet from the tail assembly. This shielded loop of 18 inches diameter is one of the most significant developments in the battle against static. Greatly improved versions of this type antenna are now being installed on all domestic air line equipment for winter operations this year.

resistors had possibilities for discharging the plane. Up to 1 milliampere discharge at 50 feet could be obtained with 100,000 volts without disturbance in the radio using the regular antenna. A 25 microampere discharge from a point without suppressors two feet from the plane prevented radio reception. Since the mechanical troubles of a trailing wire are not desirable a second version of this idea was tried. Here a series of 17 three-foot, three-thousandths inch diameter wires having a 5 megohm resistor in each was attached to suitable points on the wing and tail surfaces. Test flights of these dischargers are still in progress. Results in the air have verified the test made on the ground. The single trailing wire appears superior to the individual short wires though tests are not yet conclusive. The dischargers are still considerably short of a commercial cure and to date will only clear up radio range reception in about 15 per cent of the conditions encountered. Apparently the rate of discharge is not yet fast enough when the plane enters areas where the water particles have too high a potential. Although this system is not yet commercially practical, we feel that it is the first step on the road to a final solution.

Anti-Static Aircraft Antennas

OUR antenna tests indicate that snow-static interference is considerably worse at the rear than at the front of a plane. When the snow-static noise was of average strength, the loop located in the tear drop housing and the loop on the belly were both rotated and indicated that the source of maximum disturbance was toward the rear of the plane. When the static became extreme, rotating the loops indicated static in all directions. Probably corona had started on the wing tips and propellers in conditions of severe static.

In mild snow-static when beacon reception on the "V" antenna was normal, the two rear beacon antennas were so noisy that no beacon reception was possible. The vertical rear antenna had a 25 to 1 better signal pick-up due to polarization of the range signals, but the snow-static pick-up was about the same on either. Both rear beacon antennas were about the same length and spacing from the fuselage. We concluded that the snow-static interference radiation was not normally polarized.

Although the 40′ top antenna was far superior to the lower "V" antenna from a signal pick-up standpoint; in snow-static the "V" antenna would pick up 5000 KC short wave stations 1000 miles away when they were unreadable on the top antenna.

Although we did not test a trailing wire as an antenna, we did conclude from our study that it should be about the worst form of antenna for reception in snow-static. It would carry as high as 2 milliamperes of discharge current in vigorous "warm front" conditions. The static leak connected across the input of the average receiver is about 1/2 megohm; with a 2 milliampere peak current the voltage drop across the antenna input circuit of the receiver could be 1000 volts. The noise modulation on this DC voltage would be less than 1 per cent, or only a few volts of random AC.

During the tests we reeled out 150′ of steel No. 14 B & S stranded aircraft cable. It had no resistance suppressors in it and did not increase or decrease snow-static on the beacon frequencies. The short wave receiver, however, was tuned to a 60 meter wave length, hence, the 150′ cable plus the 65′ plane length was more than one wave length long. Reeling the cable in and out gave two nodes of maximum snow-static and two nodes of minimum snow-static. The minimum, however, was not sufficiently low to materially aid reception.

At the time we began our tests there were some snow-static theories which presumed that the noise was due to charged particles striking the antenna. To check this, a special pair of rod antennas were constructed. These were hollow, 1″ diameter tubes of Bakelite and the other of aluminum. The single wire antenna was held in the center of these tubes by insulating discs and the lead-in completely enclosed in metal tubing. With this arrangement no particle of any kind could strike the antenna itself. The aluminum tube was grounded to the plane at 3 points with 1/10 megohm resistors. The Bakelite tube was painted with a solution of airplane dope and graphite so that its entire surface was a 10,000 ohm resistance leak to the plane. Good beacon reception was obtained on either antenna, but they gave no advantage over the regular No. 14 bare copper wire antenna exposed to the snow and rain particles. We concluded that the impinging particles were not sources of noise, or that the corona noise was so great that the impinging particle noise was obscured.

In conditions when the plane is highly charged and corona appears as St. Elmos' Fire at the propeller tips, the regular bare No. 14 antenna wires must also go into corona. Since the wires have a small diameter they might discharge to the atmosphere sooner than other points on the plane. To test this, the "V" beacon antenna was replaced with wires having a diameter from three thousandths inch up to 1″ diameter tubing. As the diameter increased, the reception improved and the outgoing corona current decreased. The curves indicate, however, that only a very small advantage would be gained by increasing the present wire diameter from No. 14 to No. 10.

It is of material importance to reduce all sharp points such as cotter keys on antenna fittings, and to generally round off all rough edges on antenna structures.

A pair of horizontal and vertical diapole antennas was tried on the ground with the 100,000 volt charging equipment. They were tuned and coupled to the receiver by means of an electrostatically shielded antenna transformer. Although they gave a definite improvement over corona static as compared to a single bare wire, their signal pick-up was too poor for practical aircraft use. Resonating the aluminum tube antenna previously discussed, gave some gain against corona static, but not enough to warrant its use. Under the same conditions, a receiver having a high impedance antenna coupling system was compared with another receiver having a low impedance antenna coupling system. The corona static to signal ratio was practically identical on both receivers.

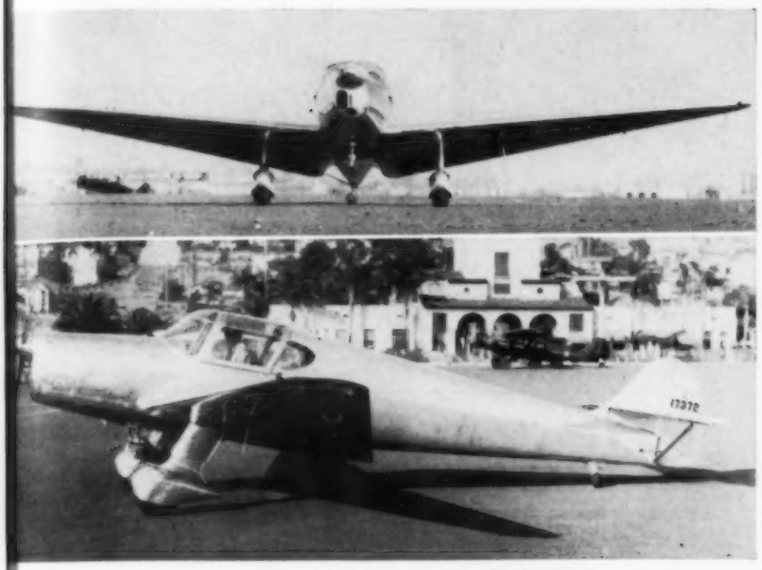
The metallically covered loop antennas gave the following advantages over the regular bare wire beacon antennas:

1. The advantage varies with the intensity of the corona discharge.
2. In mild snow-static the advantage as measured by RMS static output of the receiver may be 20 or 30 to 1.
3. In heavy snow-static the advantage drops to 5 or 10 to 1.
4. In very heavy snow-static no range reception can be heard on any loop antenna even when flying within 2 or 3 miles of the range station.

On one test trip in a Pacific tropical-marine, warm air mass front no range reception was possible when any of the anti-static loops were used for a period of 25 minutes. Had we remained in this air mass layer we could have been without range reception for several hours, since the front was parallel to the airway. With the assistance of our meteorologists such conditions can

(Continued on Page 26)

AIRCRAFT PARADE



Ryan S-C Three Place Cabin Monoplane
Powered with the Menasco C4S 150 h.p. in-line engine, this new born brother of the famous Ryan S-T scoots along at 140 m.p.h. at 5,000 feet. The full cantilever tapered wing incorporates all metal structure with a stressed metal skin front section and light fabric covered trailing portion over metal structure, a design being used on some of the latest military and transport craft in service and under development.

Ryan S-C

WITH emphasis on roomy comfort, exceptionally improved visibility, economical operation with a cruising speed of 140 mph and a range of 520 miles, the Ryan Aeronautical Company leads the aircraft parade of new models intended for fall and winter markets with the S-C three place cabin announced early this month. Seating one passenger and pilot side-by-side with a third seat in the rear, the S-C features a front seat width of 43 inches and a rear seat width of 40 inches. Inside length of the cabin is 74½ inches and height of 50¾ inches. The attractive cabin is soundproofed and upholstered by Laidlaw. A large sliding hatch forms the top and sides of the forward part of the cabin, providing easy entrance and exit. The hatch operates on ball bearing rollers and the plane may be flown with it open, closed or in intermediate positions.

Improved visibility has been accomplished by making the eye-level approximately 10 inches above the top of the cowling line which slants toward the nose at 6½ degrees, thereby affording a 180 degree panorama of the ground ahead, and complete ground vision as well while taxiing.

The fuselage is of full monocoque type with a thick gauge skin of 24 ST Alclad. The wing panels are removable from the fuselage and are constructed of the same dural and Alclad material. The wing itself has a stressed metal skin front section and a slight fabric covered trailing portion over the metal internal structure, providing a natural center of gravity coinciding with the center of pressure. The ailerons are metal structured of dural and steel and are both statically and aerodynamically balanced.

The tail surfaces are metal structured of 24 ST Alclad and steel. The stabilizer is mounted quite high which accomplishes definite aerodynamic and practical advantages. It is braced by a single streamlined strut on either side.

The landing gear is of the single strut, full cantilever type completely faired. It incorporates a 6 inch stroke oleo shock absorber strut and full air wheel type low pressure tires. The wheel tread is wide, being 8 feet ¾ inches. The tail wheel is of the pneumatic type, full swiveling and mounted on an oleo shock absorber strut.

Engine equipment in the plane is the Menasco C4S 150 h. p. Super-charged type.

Longitudinal trimming is by trailing edge elevator tab which is controllable by a small crank conveniently located. A single split flap of the perforated type is simply and instantly controllable by a lever on the pilot's side of the cabin. The instrument panel provides space for a generous number of instruments with the flight instrument panel being supported on Lord rubber mounts. Provision is made for retractable landing lights, flares, radio receiver and transmitter, and generator in addition to standard equipment.

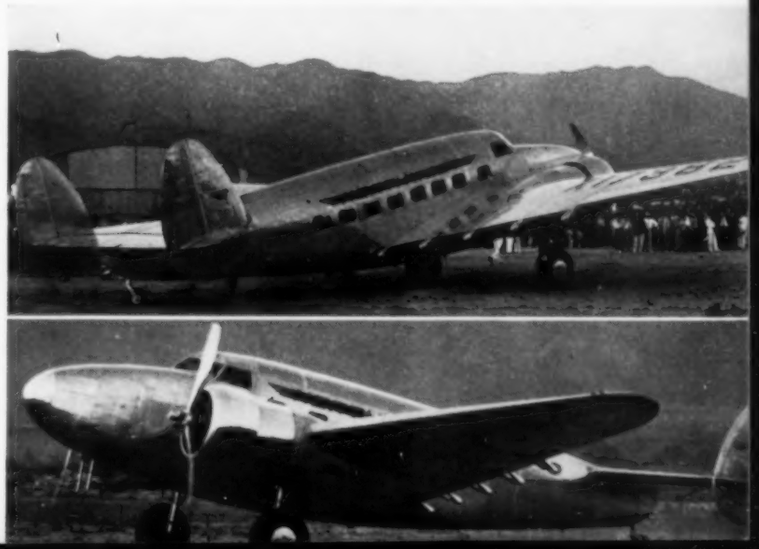
SPECIFICATIONS AND PERFORMANCE OF RYAN SC
Equipped With Menasco C4S (150 H. P.)

Wing Span	37′ 6″
Overall Length	26′ 7⅛″
Overall Height	7′
Wing Area	202 sq. ft.
Empty Weight (Standard Equipment which includes Starter and Battery)	1300 lbs.
Useful Load	800 lbs.
Gross Weight	2100 lbs.
Wing Loading	10.4 lbs. per sq.ft.
Power Loading	14 lbs. per h. p.
Max. Speed (3000 ft.)	152 m. p. h.
Cruising Speed (3000 ft.)	136 m. p. h.
Cruising Speed (5000 ft.)	140 m. p. h.
Landing Speed	45 m. p. h.
Rate of Climb	900 ft. per min.
Take-off Run	166 yds.
Service Ceiling	19,400 ft.
Max. Cruising Range	520 miles

Lockheed "14"

UPON successful completion of static load tests as required by the Bureau of Air Commerce, the super-"Electra" 14 passenger transport took to the air last month over the San Fernando Valley under the super-

Lockheed "14"
An enlarged, mid-wing version of the Electra, the "14" incorporates the sensationally new Fowler type flaps and integral fuel tanks. Speed tests now being made at the Lockheed factory are expected to validate the performance figures announced several months ago after complete engineering data was released.



vision of Lockheed's chief test pilot, Marshall Headle. The complete design load of 30,000 pounds was applied to wings and the plane withstood the tests most successfully. During flight tests it was reported the new Fowler type flaps, clearly shown in the accompanying photographs, functioned efficiently to provide landings at 47 m. p. h. indicated air speed.

Carrying a normal load of eleven passengers, crew of three and cargo, predicted top speed has been set at 250 m. p. h. with a cruising speed of 225 m. p. h. confidently expected by Lockheed engineers.

Power is supplied by two Pratt & Whitney S1EG Hornets rated at 850 h. p. each for take-off at 2500 r. p. m.

Additional data follows:

Length	44′ 3⅞″
Span (Wing)	65′ 6″
Height Overall (Tail on Ground)	11′ 5½″
Wing Area (including Ailerons and Fuselage)	551.0 Sq. Ft.
Landing Gear Trend	15′ 8″
Fuselage Material	All Metal
Wing Material	All Metal
Empennage Including All Control Surface Material	All Metal
Total Volume of Passenger Cabin	580 Cu. Ft.
Total Volume of All Cargo Compartments	190 Cu. Ft.
Engine Model Number (Geared 3 to 2)	Hornet S1EG
Engine Blower Ratio and Compression Ratio	12:1; 6.5:1
Engine Overall Diameter	54-7/16 Inches
Engine Bore	6⅛ Inches
Engine Stroke	6⅜ Inches
Engine Displacement	1690 Cu. In.
Engine H. P. at R. P. M. for Take-off	850 at 2500
Engine Fuel Octane Required for Above	87
Engine H. P. for Maximum Continuous Emergency Operation	800 at 2300
Engine Fuel Octane Required for Above	87
Engine H. P. for Maximum Continuous Operation	760* at 2250
Engine Fuel Octane Required for Above	87
Engine H. P. for Cruising (Maximum Recommended)	525‡ at 2000
Engine Fuel Octane Required for Above	87

* Maintains this power up to 6,700 feet.
‡ Maintains this power up to 12,800 feet.

Boeing School T-5

THE Boeing School of Aeronautics literally bagged two birds with one stone when they designed and constructed their new two-place, low-wing all-metal monoplane that boasts a gross weight of 3200 pounds and an estimated cruising speed of 223 miles per hour at 10,000 feet. In the first place they have provided the school an advanced trainer with handling characteristics similar to those of modern, high performance transports; and second, it served the important function of construction, giving students training in the engineering and production methods employed in modern aircraft manufacturing. The actual design was undertaken in 1933 by Don Thorp, member of the faculty. Actual work of engineering and construction came under the supervision of Walter McGinty, who is in charge of engineering at the Boeing School. All students enrolled in shop courses participated in the construction work.

Boeing Advanced Trainer T5

This exceptionally clean trainer was designed and has been built by students of the Boeing School as a part of the regular instruction. It is powered with a Wright J-6 Whirlwind of 320 horsepower. The plane is fully equipped with two-way radio, night flying equipment and a complete set of instruments for advanced cross-country instruction.

Curtiss SOC-1 Observation Scouters During Maneuvers

These Navy Scouting biplanes are equipped with a single float for catapulting from battleships and cruisers. For land operation, they can be fitted with Curtiss single-strut landing gear. Delivery of 258 of these planes, one of the largest orders placed in this country for airplanes since the World War, is now being completed by the Curtiss Aeroplane Division of the Curtiss-Wright Corporation, at Buffalo, for the United States Navy. The SOC-1's are equipped with folding wings which permit storage of a much larger number of planes in hangars and on flying decks when used on carriers.

With a wing loading of 23.3 pounds per square foot and aspect ratio of nine to one, the advanced trainer is powered with a Wright R-760-2 Whirlwind of 320 h. p. at 2200 r. p. m., and equipped with a Hamilton Standard constant speed propeller.

The fuselage is of semi-monocoque construction with duralumin being used throughout and the large cockpit, providing unusually good visibility, is covered with a sliding hatch of dura-plastic glass; the wing is of stressed skin monospar construction throughout, likewise with duralumin being used entirely. The streamlined landing gear is non-retractable and the wings are equipped with hydraulically controlled flaps.

The following are specifications and estimated performance of the Boeing School Advanced Trainer:

Dimensions

Span	34 ft. 1¼ in.
Length	24 ft. 8½ in.
Tread	2 ft. 2¼ in.
Propeller Diameter	8 ft.

Areas

Wing	137.3 sq. ft.
Aileron	11.0 sq. ft.
Stabilizers	12.9 sq. ft.
Elevator	11.3 sff. ft.
Elevator tab.	1.1 sq. ft.
Fin	5.9 sq. ft.
Rudder	7.6 sq. ft.

Weights and Loadings

Empty, 2315; Disposable Loads, 885—Gross Weight	3200
Wing Loading	23.3 #/sq. ft.
Power Loading	10.0 #/H. P.

Performance (Estimated)

Minimum Speed	65 (Flaps)
Maximum Speed	226 (Sea level)
Cruising Speed (225 hp)	200 (Sea level)
Cruising Speed	223 (10,000 feet)
Cruising Speed	206 (13,000 feet)
Endurance (13,000 ft.)	4.25 Hrs.
Range (13,000 ft.)	875 miles
Rate of Climb (initial at sea level)	2000 ft./min.

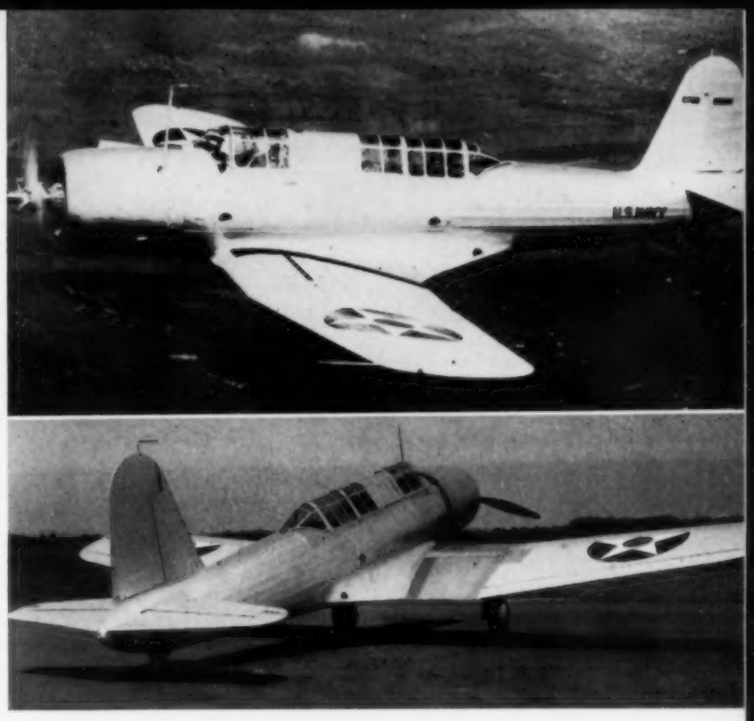
Vought SB2U-1

THE Chance Vought Aircraft division of United Aircraft Corporation has delivered to the United States Navy the first production model of an order for 54 scout-bomber airplanes. Following demonstration flights before Navy officials at East Hartford, the airplane was flown to the Naval Air Station at Anacostia, D. C., by Lyman Bullard, Chance Vought test pilot, accompanied by John Hospers, service representative.

Designated as model SB2U-1, the new airplane is a low-wing monoplane, designed for operation from the decks of the Navy's aircraft carriers, both as a scout and as a dive bomber, carrying either a 500-pound or a 1000-pound bomb. It is constructed of metal, with fabric covering on the rear portions of the wings and fuselage, and on the movable tail surfaces.

Accommodations for a crew of two are provided in the fuselage, which is equipped with a streamlined transparent cabin completely covering both cockpits. As a further aid to maximum performance, the landing gear is retractile, with the wheels folding into recesses in the wings when the airplane is in flight.

The airplane is powered with a fourteen-cylinder Pratt & Whitney Twin Wasp Junior engine, rated at 750 h. p., and fitted with a Hamilton Standard constant speed propeller. As a new type other details are not available. The remaining airplanes on the contract are scheduled to be completed by the end of the year.



New Vought Scout-Bomber For Navy

Sikorsky XPBS

THE largest patrol bomber ever constructed is rapidly nearing completion at the Sikorsky plant. Designated by the Navy as the XPBS, the new bomber is a four-engined flying boat of all metal construction. It is a high wing, full cantilever monoplane of typical Sikorsky design, exceeding previous Sikorsky commercial flying boats in weight by some five to six tons.

Power is furnished by four Pratt and Whitney twin Wasp engines of 1050 h. p. each with Hamilton Standard constant speed propellers. Aileron and flaps are of all metal construction, fabric covered, with the full trailing edge flap permitting rapid takeoff and slow landing speeds. A complete radio compartment is installed with radio equipment that has been compared to an average sea going destroyer's. Commodious living accommodations for the crew, a mechanic's workshop, galley with electric stove, water distiller, and dry ice refrigerator will permit sustained operation of the dreadnaught. It is completely sound-proofed and provisions are made for breaching, docking or ramping wherever it may be flown.

Armament consists of bow, rear and center gun turrets. A complete 110 volt electrical system is on board which is operated by an auxiliary gasoline engine driving a generator. A complete telephone system makes possible communication by voice from any point of the airplane.

The XPBS is being groomed for first flights which will take place over Long Island sound shortly. Delivery to the Navy is expected early in the fall.

SIKORSKY XPBS FOR U. S. NAVY

The world's largest patrol bomber built by the Sikorsky Aircraft Corporation is powered by four Pratt & Whitney 1050 h. p. Twin Wasp engines and represents one of the most powerful bombing planes ever developed in the United States.

News of the Month in Review

The Manufacturers

Records Broken in First Six Months

As the months of 1937 roll by into the past statistics tell a story of ever mounting volume in the manufacture of airplanes, engines and accessories. At the half way mark in this years activity sales of aircraft, engines and parts totaled $49,450,114 for an increase of 53 per cent over the same period last year, according to an announcement by the Aeronautical Chamber of Commerce.

Encouragement comes from the fact that in this country alone commercial airplane deliveries seem definitely on the march to surpass military production in the near future. For the six month period 1,061 commercial airplanes were delivered for a total value of $9,989,085, an increase of 81 per cent over last year. There were 953 two, three, and four-place private airplanes, 97 transport planes, three seaplanes and eight amphibians.

At the same time military production was valued at $12,462,564 for an increase of 49 per cent over last year. Of the total production 44.5 per cent represented commercial sales.

The summary of the deliveries follows:

	Units	Value	Per Cent
Commercial airplanes	1,061	$ 9,989,085	20.2
Military airplanes	2,264	12,462,564	25.2
Commercial engines	2,083	7,797,038	15.8
Military engines	936	7,075,309	14.3
Airplane spares		8,135,406	16.5
Engine spares		3,990,712	8

Export Activity Increases

The Seversky Aircraft Corporation has completed tests on the world's fastest two-place fighter which has been developed for export. With a speed said to be well above any airplane of this type the new craft carries fuel for a cruising range of 4,000 miles and mounts a .30 calibre gun behind the rear cockpit which is completely retractable.

The Chinese and Russian governments have made inquiries about the new craft and after demonstration flights are made in South America the airplane will be taken to Europe.

Shipment of Taylor Cub airplanes was recently made to five different foreign countries. Dealers in Oslo, Norway, Portugese West Africa, and Manila, P. I., private owners in Calcutta, India, and Christ Church, New Zealand, each received a Cub.

Taylor-Young listed among its deliveries an airplane to the Central Alaska Transport Company of Fairbanks, Alaska. Nine months out of the year the light plane will be operated on skiis.

To facilitate a mounting export business Menasco Manufacturing Co. has appointed Haller Aviation Limited of East London as a dealer for South Africa and Cai Caspersen of Copenhagen, Denmark, as representative in the Scandinavian and Baltic countries.

Two supercharged C6S4 Menasco engines rated at 250 h. p. at 5,000 feet have been delivered to Bellanca Aircraft Corp. to be fitted in a special airplane being built for Capt. Alex Papana of Rumania. Papana will use the airplane for several trans-oceanic flights as well as in the European non-stop round-trip competition from Paris to Damascus. He will also be seen with the new plane at the National Air Races.

Stinson Active

Unprecedented sales of Stinson airplanes has led to the chalking up of two new marks at the Stinson factory, namely, the production of the 900th Lycoming powered Reliant as well as the 100th Wright powered Reliant of the last twelve month period of production. Three of the latter type were sold recently to the Cuban Army, Navy and the Sociedade Colombista Panamericana. These planes will set out shortly on a good will flight around South and Central America, Mexico and the West Indies to commemorate the 445th anniversary of the discovery of America by Columbus. Wallace Beery, prominent movie star, took delivery on another Wasp powered Reliant last month.

The 100th Stinson powered by Wright goes to the Cuban Air Force.

Military Purchases

As the last of the Boeing YB-17 bombing planes arrived at Wright Field on August 4 the Boeing company set out to complete an additional thirteen bombers designated as B-17B as well as spare parts for two additional planes. The B-17B airplanes are new excepting a few minor changes and will cost the army air corps $3,708,002. The YB-17's have passed very thorough military tests and completion of the original contract was made eleven weeks ahead of time.

Boeing is also working on six seventy-two passenger flying boats for Pan Amreican Airways, and eight four-engined thirty-three passenger landplanes for TWA.

1938 Show in Chicago

Next year's one big aircraft show will be held in Chicago from January 28 to February 6, according to Leighton W. Rogers, president of the Aeronautical Chamber of Commerce of America, who announced that the show committee of the Chamber, trade association for the aircraft industry, has granted its Class A sanction to this exhibition. The show will be held in the International Amphitheater under the management of the International Air Show, Inc., which includes a group of prominent Chicago business men. It will afford the industry an opportunity to display new model airplanes, engines and accessories as the introduction of its 1938 sales campaign.

Douglas Shares Earnings

Douglas Aircraft Company reports for the first six months of 1937, net earnings of 92 cents a share, representing the consolidated earnings of Douglas Aircraft and its wholly owned subsidiary, the Northrop Corporation. These earnings, aggregating $525,822 on the consolidated stock, after provision for depreciation and normal Federal income taxes on 570,683 shares of stock outstanding, compare with earnings for the corresponding period a year ago of $194,611 on Douglas stock and a loss of $112,437 on Northrop, equal to 18 cents a share.

Douglas now has the greatest backlog in its history. As of May 11, orders on hand mounted to $26,800,000. Since that date the Douglas division has received an additional Army bombardment airplane order for 177 planes amounting to $11,651,948. At present the consolidated backlog approximates $36,600,000, of which 64.4 per cent is for the Army; 15.8 per cent for the Navy; 8.4 per cent domestic transport; and 11.4 per cent foreign transport. Both divisions are operating at capacity with a force of 8,000 persons.

Cleveland Gets Set

The starter's gun is about to sound on another spectacle of aerial bravado at the speed city of Cleveland. With a total of $82,000 in prize money dangling bountifully as tribute, speed pilots from coast to coast and many from foreign countries are hastily making every last minute effort to groom their planes for determined record smashing. And on many tongues is the stern assertion that the Thompson Trophy will not leave our shore this year without a bitter fight over the withering ten mile course.

Last minute dope has it that Jacqueline Cochrane will be a serious contender in the Bendix with a D17W Beechcraft powered with a supercharged Wasp engine rated at 600 h. p. The plane has a cruising speed of 240 miles per hour and is fitted with an extra fuel tank mounted in the rear of the cabin with a capacity of 100 gallons. Using a total of 275 gallons of fuel and oxygen equipment she plans to make the trip in one hop while flying above 20,000 feet.

Lee Miles is also expected to be on the line for the Thompson this year although it has not been definitely determined whether he will pilot the Seversky pursuit plane flown by Fuller in the Bendix or the Hughes Special monoplane which last year made a new trans-continental record and holds the world's landplane speed record.

Spectators will be pleased to learn that Harold Johnson will return this year with his big Ford "flying insane asylum." He will give a repeat performance of looping, rolling, and inverted flying at an altitude about twice the wing span. The ship will also be spun from 3,000. Captain Alexander Papana of the Roumanian Royal Flying Forces will have a new ship and a new program. Jose Cabral of the Portugese Navy will give a show in a Fleet seaplane.

United Engineering Service, the independent group of aeronautical engineers located at the Union Air Terminal in Burbank, California, are engaged in engineering numerous private projects. It is understood that one design well under way is to be a mystery racer for a lady pilot who wishes to remain anonymous for the present. As many of the staff were responsible for the design of the racer for Howard Hughes, it is expected that something pretty hot will be turned out.

200th Taylor-Young

The 200th Taylor-Young airplane was delivered off the assembly line at Alliance, Ohio, on August 17 to John Livingston, famed racing and stunt pilot who is now a Taylor-Young distributor at Waterloo, Iowa. Starting production in March, when nine planes were completed, assembly has been steadily stepped up to sixty-two planes produced in July. Production records thus far are five planes in a single day, sixteen in a week.

Ryan ST Sales Up

New orders for the 125 Menasco powered Ryan S-T open monoplane have been added to the company's already heavy backlog. Booth-Henning, Inc., of Love Field, Dallas, sold another ship during the month, the new plane going to J. O. Womack of Marshall, Texas. Other deliveries include those to the Franklin Rose Aircraft, Inc., San Francisco, Air Industries, Inc., Detroit, Haller Aviation, Union of South Africa, G. Tomoyo of Caracas, Venezuela, Katherine Cheung, Chinese aviatrix and Chester Rians of Peoria, Ill.

Beechcraft Sales

Two planes to be used as ambulances have been ordered from the Beech Aircraft Corporation by the military council of the Chinese National Government. Both planes have a cruising speed of 208 m. p. h. and carry five passengers with the 450 h. p. Wright powerplant. J. R. B. Moore of Laredo, Texas, and Hugh Watson of Sharonville, Ohio, have ordered E17B planes powered with 285 h. p. Jacobs engines. Dr. Samuel Bosch of Buenos Aires, Argentina, has taken delivery of an E17L 225 h. p. Jacobs powered Beechcraft to be used in his medical practice over a wide territory in South America. Aircraft Industries of Canada have purchased an SE17B model with Edo floats.

Scheduled Air Transport

TWA Opens New Service

Award of the TWA air mail contracts over two new air mail routes will result in establishment of overnight twelve and one-half hour, two-stop flights, San Francisco to Chicago; and sixteen and one-half hours, three-stop flights from San Francisco to New York in Douglas Skysleeper planes, according to Jack Frye, president of the line. Flights out of San Francisco will begin about September 1. Col. Alton Parker will fly the inaugural schedule.

TWA further announces that extra fare on the club lounge appointed airliners has been eliminated although berth charges will continue as in the past. A recent addition of another daily round trip trans-continental flight provides patrons with four round trips daily across the country.

Air Express Makes Heavy Gains

General Air Express, affiliated express company of TWA, set an all time high increase of thirty-two per cent for the first six months of this year as compared to the same period in 1936. Heavier shipments of department store merchandise and foodstuffs accounted for a great deal of the gain.

Meanwhile the Railway Express Agency pointed to an increase of twenty-four per cent for June this year over the same month last year. A total of 51,837 shipments were made. A recent decision now permits live animals to be shipped by air express when they produce no offensive odor and require no food or water in transit. The decision was made due to the increased speed of transport and temperature regulated cargo compartments.

United Provides Unique Comforts

Introducing new innovations in overnight air travel, United Air Lines has established coast to coast sleeper plane service and will be operating three round trip schedules by August 15.

To provide added luxury the sale of berths on the twenty-four passenger planes is reserved to twelve with the sky room reserved as a courtesy lounge and smoking compartment. Plans are also being formulated to serve hot breakfasts to passengers including the old favorite of ham and eggs. As a promotion to safety United pilots have been ordered not to fly lower than 2,000 feet over the route and sealed barographs are mounted in every airplane to insure that this order is not ignored.

Continental Extends Route

Signal attention was directed to southwestern air transport last month when on July 1, Varney Air Transport, last scheduled operator of single engine equipment, became Continental Air Lines, Inc., who subsequently have expended their route into Denver and inaugurated new Lockheed 12A equipment on all schedules. The new transports cruise at 213 m. p. h. over the company's route between El Paso and

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"There She Is!"

RCA Aviation Radio Equipment helps complete another flight safely!

Put this inexpensive equipment, owned by most airports and planes in your ship!

With night falling over the Alleghenies, the pilot runs up over a thick, soupy overcast. But he feels no danger. Traveling with his RCA Radio Compass, he pushes on. Arriving over the airport, he lets down for a landing, using his RCA Transmitter and Receiver to contact the field. Below, strong lights throw a dull glow on the ground. As the plane carefully descends, two-way radio communication is maintained. Suddenly it is visible! A shout goes up as the pilot "sets her down." And radio has again helped complete a flight, in safety!

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Built by the world's most experienced radio company, RCA Aviation Radio Equipment is yours at amazingly modest cost. There are RCA instruments for every type of airplane and airport. Get details today. Know the enjoyment of *safe* flight with radio that's RCA ALL THE WAY!

Suddenly, from a thick overcast, the plane appears—letting down and guided safely by RCA Aviation Radio Equipment!

RCA for Aviation Radio

A SERVICE OF THE RADIO CORPORATION OF AMERICA

RCA Aviation Radio Instruments are sold by AIR ASSOCIATES, INC., Glendale, Calif.; Chicago, Ill.; Garden City, L. I. . . . or write direct to Aviation Radio Section, RCA Manufacturing Company, Inc., Camden, N. J.

This Waco plane, owned by Firestone Tire & Rubber Co., and piloted by Ed Quigley, is equipped with an RCA AVT-7 transmitter and AVR-8 radio compass.

the Colorado capital. This is thought to be the fastest operating air line in the world.

Prior to final adaptation of the new equipment over the line, Continental ran a series of interesting test flights, including single engine tests at the Santa Fe, New Mexico, Airport, highest airport in the United States approved for scheduled air line use. The plane took off with full gross passenger and gasoline load, flew to 9,000 feet, circled and landed, all on one motor. Another test showed a ceiling of 12,000 feet on one motor with full pay load by dumping surplus gas. All instrument readings and engine temperatures were more than satisfactory through the tests, it was reported.

Continental has instituted a travel sales campaign of interest, duly emphasizing the many scenic wonder of the route flown. Connections are made at El Paso with American Airlines, at Albuquerque with TWA and at Denver with United Air Lines.

C. & S. Adds New Schedule

For the first time in the development of air transportation in the Mississippi Valley, three convenient daily schedules each way between Chicago and New Orleans will be operated on and after September 1st, it was announced recently by the Chicago and Southern Air Lines President, Carleton Putnam. The new schedule, to be known as "The Rainbow," will be inaugurated Wednesday, September 1st, as an afternoon flight added to the present morning and evening schedules.

Actual commercial operation of these new flights will start with the departure of the southbound "Rainbow" from Chicago Municipal Airport at 4:00 P. M., arriving St. Louis 5:37 P. M., Memphis 7:27 P. M., Jackson 8:50 P. M. and New Orleans 10:05 P. M. The northbound "Rainbow" will leave New Orleans at 3:30 P. M., arriving Jackson 4:55 P. M., Memphis 6:00 P. M., St. Louis 7:48 P. M. and Chicago 9:48 P. M. The new schedule will be operated with Lockheed Electras and will cover the distance between Chicago and New Orleans in slightly more than six hours.

Who Rides the Airways?

Over a thirty day period, Northwest Airlines carefully checked its junction point at Billings, Montana, and of sixty-nine passengers who disclosed their occupation and reasons for travel, the following was learned:

Occupation: Four lawyers, two farmers, one gambler, two housewives, one radio announcer, two livestock men, one commercial secretary, two beauty operators, eight traveling salesmen, six school teachers, six merchants, two advertising men, six government employees, four oil operators, three retail salesmen, four retail sales girls, nine "dudes" flying to ranches, two doctors, two dude ranchers and two hotel men.

Reason for travel: twenty-six on personal business trips, twenty-four on vacations, four on illness or emergency flights, six to conventions, four "buying" trip, and three flying east to drive autos home.

There were thirteen women and fifty-six men.

Braniff Gains Despite Strike

July passenger traffic on Braniff Airways showed a sixteen per cent increase over June, Chas. E. Beard, vice-president of the line announced. Traffic in July, 1937, was ten per cent greater than July, 1936, which was a record month for the line at that time. The increases were considered most satisfactory in view of the revenue lost during the latter part of July due to the ground employees' strike of Pan American Airways in Mexico which forced a temporary discontinuance of air service to Mexico. Braniff makes a direct connection with Pan American Airways at Brownsville for Mexico City and other Latin American points. A conservative estimate of the business lost because of the strike would have given Braniff traffic a twenty-five per cent increase for July, 1937, over July last year, Beard stated.

American Sets New World Mark

World records for revenue passengers carried and revenue passenger miles flown in a single month were again broken by American Airlines, Inc., during July, C. R. Smith, president of the company, announced recently.

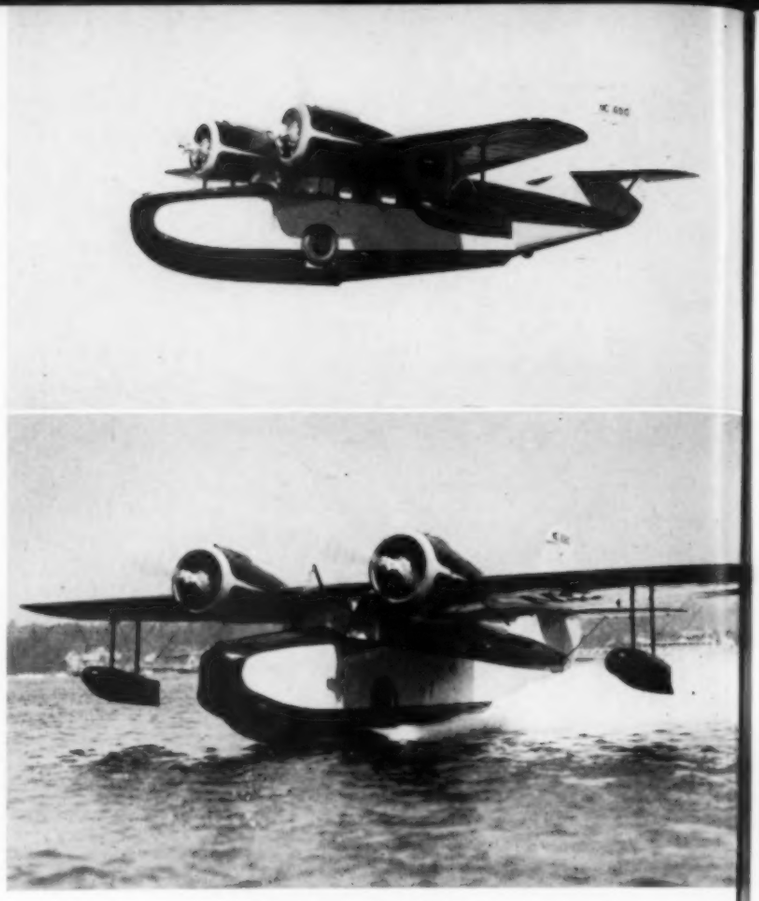
During the month American carried 33,333 paid passengers and flew a total of 13,078,082 passenger miles, which records compare with the 30,902 passengers carried and 12,541,135 passenger miles flown in June, previous high marks for the entire industry.

Holland Drops Surcharge on Air Mail

As a result of a recent announcement of the postal department, Holland holds the world wide distinction of being the only nation providing air mail service at no extra charge. All classes of mail are now being sent by air when it can reach its destination faster by that method. This holds good on the 9,000 mile route of the K. L. M. from Amsterdam to Batavia (Java). A Hollander can send a ten gram (0.35 oz.) letter from any city in Holland to the Netherlands East Indies for slightly under seven cents minimum. The destination will be reached in five days as compared to twenty-two days by steamer.

Peru Planning Air Exposition

The Peruvian Government has announced special low rates, exemptions and courtesies to be shown to foreigners to encourage participation in an exposition of aeronautical equipment at Lima in connection with the Pan-American Aviation Conference to be held September 16 to 23.



The Grumman G-21 Amphibian
A Grumman for the commercial trade bids fair to find a market among seaboard air lines and business executives. Five to seven place capacity, the G-21 is powered with two Pratt & Whitney Wasp Jr. S B engines that provide a cruising speed of 168 m.p.h. at 62½ per cent power and 184 m.p.h. at 75 per cent power.

The government will exempt exhibits from the payment of consular fees and import duties and provide display space without charge. Assurances have likewise been given officials by steamship companies that freight rates and passenger tickets will be reduced twenty-five per cent. A like reduction will be offered by hotels.

Personnel

Effective August 1, Mac Short, vice-president and chief engineer of Stearman Aircraft Company, resigned his position and moved with his family to Los Angeles. Although definite announcement has not been made it is currently rumored that Short will be connected with a newly formed aircraft concern soon. He joined Lloyd Stearman in 1927 in formulating the Stearman concern.

At a special meeting held last month Croil Hunter was elected to succeed L. M. Leffingwell as president of Northwest Airlines, Inc. Leffingwell recently resigned from his position but will continue as a director of the company.

Herbert Glasenapp, who has been with Air Associates, Chicago Branch, for the past seven years in the capacity of propeller repair and service, is now with the Maynard-Di Cesare Propeller Corporation, in charge of the Propeller Repair Department.

Effective July 15, George Prudden became chief operator of the Lockheed Aircraft Corporation while Frank Scharmack, former head of the inspection department, transferred to a new position created in an effort to insure better coordination between production and engineering divisions of the factory.

E. Leonard Nelson, pioneer airline traffic man in the Southwest, joined Braniff Airways July 15 and has been assigned to the line's Fort Worth division. He recently resigned as district sales manager in Texas for American Airlines. Nelson began airline work with the Southwest's first commercial transport system, Texas Air Transport, in 1929. Since that time he has established a reputation in which air travel and Leonard Nelson are synonymous to transportation patrons in Texas.

Milburn With Curtiss-Wright

Guy W. Vaughan, President of the Curtiss-Wright Corporation, has announced the appointment of L. C. Milburn, as Works Manager of the St. Louis Airplane Division of the Curtiss-Wright Corporation. In his new position, Mr. Milburn will have charge of all manufacturing operations of the St. Louis plant. Mr. Milburn resigned as Vice President of Glenn L. Martin Company, to accept this new position with Curtiss-Wright Corporation.

Ports of Call

Correspondence from the Airports and Airways

Blackwell, Oklahoma

By W. D. Mauk

Forty-two visiting planes were registered in on the Blackwell Airport during the past month which should set some kind of record for a city of this size.

The Northern Oklahoma Flying Service, operators of the airport, announce the sale of the following planes during the month: Ord Thompson, of Durham, Oklahoma, Hisso Swallow, Dave Peterson, of Wichita, Kansas, J-6-7 Cessna. Mr. Thompson is the largest student in the State, weighing 278 pounds and as Ye Scribe is the instructor and weighs 210 pounds, you can readily see why Mr. Thompson bought something with plenty of horses. Mr. Peterson is head of the Experimental Department for Stearman Aircraft and we understand that he has already secured his private ticket.

John Heasty, of Mayfield, Kansas, had the misfortune to run into a buffalo wallow on a take-off recently and had his Waco in for a repair job. John had just had his plane back a few days when a gas line broke causing a forced landing which called for more repairs. We hope you have better luck in the future.

Kenneth Koelling, flying traffic cop, sold his Monocoupe this month and is having a hard time trying to stay on the ground. We are betting that Kenneth will be back in the air soon with some kind of a "Harplane."

Earl Fields was in for a couple of days with his Stinson trimotor and did a fair business. Earl has a nifty new house trailer and Mrs. Fields wields a wicked skillet in the new bus.

Walter D. Mauk purchased a Velie Monocoupe from A. S. Stewart, of Mayfield, Kansas, this month and while he and the "Mrs." were over south of the airport buzzing around, the crankshaft went on a "Let down strike" and they just made the edge of the field. Mrs. Mauk has had to take considerable "razzing" because she had to walk home from an airplane ride.

W. D. Burke, of Tonkawa, soloed his Swallow "T. P." this month and is doing a nice job of flying. He plans to take his private license test just as soon as he has the required hours.

Well, folks, we must sign off, drop in and see us some time, plenty of ice water on tap and sudden service at your command.

Bloomington, Illinois

By C. A. Zweng

James L. Hurst, of Lincoln, Neb., paid us a visit. He was demonstrating an Arrow Sport.

Take your vacation by air—that's the way L. L. De Wals, of Fort Myers, Florida, is doing. He dropped off here on his way to visit relatives in Iowa. He was flying a Taylor Cub and was accompanied by his son.

The Department of Commerce has let a contract for a $40,000 Radio Station for Bloomington. This is good news.

The tall grass doesn't have a chance now—because Bob Davis and Art Carnahan rigged two mowers behind the tractor and are making double time. No excuse now for nosing over.

Iral Withers, of Ellesworth, Ill., and E. L. Evans, of El Paso, are the proud possessors of private licenses.

Art Carnahan, instructor, took in the big Chicago double header. He made the trip in the 6-place Travel Air.

Elwood B. Cole, technical advisor, Bureau of Air Commerce, was an Illinois visitor during July. Mr. Cole was former secretary of the Illinois Aeronautics Commission.

George C. Roberts, secretary of the Illinois Aeronautics Commission, has a message of warning in the last monthly bulletin which he issues from Springfield, in which he ays: "We have noted the increased number of failures among students taking examinations for a private license. We wonder if these students are getting the proper training, etc." Now, that is something to think about—reminds us of the student who had been doing solo time for several weeks and didn't know what the adjustable stabilizer was used for.

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● The Waco owner forfeits none of the advantages that attend ownership of the finest automobile. Waco seats are luxuriously comfortable, and cabins are generously spacious—licensed for five persons . . . Waco performance satisfies the most critical demands . . . And Waco offers the benefits of world-wide sales and service facilities approached by no other airplane manufacturer. Your local dealer will welcome an opportunity to demonstrate.

THE WACO AIRCRAFT COMPANY • TROY, OHIO

WACO LEADS IN AIRCRAFT REGISTRATION

Chattanooga, Tennessee

By Henry L. Gauntt

Allied Air Service has been doing a surprising amount of business this summer. Harry Porter flies the Waco Custom Cabin and gets practically all the charter trips, while Webb Kimball and Buck Frame have built up such an army of students that it became necessary to get another plane. They bought a Taylor Cub from Fred Lanier, who, by the way, was once Chattanooga's pride of the sky.

Allied Air Service has refinished their Waco F-2 and are now at work recovering and overhauling two Taylor Cubs, one from a Club in Cleveland, Tenn., and the other from the Dixie Flying Club, of Chattanooga.

Harry Porter had the odd and rare experience of burning up a wood propeller while in flight. Yep, the hub flange broke and the heat caused by the two parts rubbing together charred the propeller hub almost half in two.

The Stork-Hamby Flying Service has been revived and they are sporting an Aeronca distributorship and a Model K Aeronca.

Cincinnati, Ohio

By Al F. Davis

Back at the turn of the centrury, one of the chief diversions on Sunday afternoon in the "sticks" was to go down and watch the train come through. There was always a clatter and a bustle of excitement as the 5:15 puffed out of the station.

Now you can take the boy out of the country, but you can't take the country out of the boy, so on a recent Sunday afternoon I went out to the Airport (with about 10,000 other "hicks") just to watch the airliners arrive and depart.

Between 7:00 and 7:30 there are four Douglas Airliners arriving at Lunken Airport from all parts of the United States. Their arrival is so timed that passengers can make connections with all ships.

And are people riding the Airways? They are—and I don't mean maybe. All four ships had capacity loads. The passengers were as diversified as those you would see riding a train or bus. And the ladies —yes, they comprised fully 40 per cent of the passenger list. But here's the thing I noticed. Many were wearing white summer clothes and all looked as fresh as if they were off to a party. Now when you consider that some of these passengers left Texas and the West Coast some few hours earlier, you can see why the ladies like this method of travel.

American Airlines recently added four new flagships to this division. One of the passengers to board the Flagship for Washington, D. C., was Walter Clayton, well known to Cincinnatians when he was engineer at the All-Metal Airplane Company, makers of the rugged old Flamingo Airplane.

R. L. Stevens, inspector with the Department of Commerce, flew down to the Aeronca factory early in August.

Roger Schlemmer, chief engineer at the Aeronautical Corporation of America, just returned from a vacation in Canada, says the fish up there were on a vacation too.

The Aeronca Employees Flying Club has a bang up ball club this year as a certain "dark horse" team will testify. The club announces a picnic at Waynesville on the 14th of August. The first picnic the club gave at Coney Island was a big success and this one should be even better.

The Aeronca Employees Flying Club was organized early this spring to make it possible for all the employees to learn how to fly at small cost. It has succeeded admirably for there is scarcely a week goes by that some student does not solo.

Russ Daniels of the engineering department is the latest to make the solo flight.

Recently I spent a couple of weeks at Fort Knox, Kentucky. Happened to be there during the maneuvers of the 1st Cavalry and the Ohio National Guard Cavalry. The 1st Cavalry, with more than 100 years of service behind it, is now completely mechanized.

The sham-battle was interesting for many reasons. It shows the fast pace at which the next war will be fought. But the thing I wanted to mention is that the combat cars or "tanks" to you and me are powered by Continental radial airplane engines and they make the combat cars scoot along at 600 miles per hour with no trouble at all.

Coffeyville, Kansas

By Harold E. Haggard

Preliminary surveys are being made for a new proposed runway which will be considerably longer than either of the two existing ones. The new runway is to be approximately 4500 feet in length, and will run from the southwest corner to the northeast corner of the airport. It is hoped that with the completion of this new runway, we will at last obtain the airmail and passenger service which was denied this city last year due to the inadequacy of the runways.

A rather unusual "solo party" was enjoyed by about fifty fliers and would-be fliers recently when Harry Metzger decided to throw a party in celebration of his nearing his solo hop. A local dance orchestra played for dancing in the hangar, and sandwiches and soft drinks were served "a la buffet" style. No doubt my one reader is wondering why I have referred to the party as being unusual, so, for his benefit, I'll explain; Harry was a little previous because he hasn't soloed, and now we are looking forward to the day he does solo, anticipating another "solo party."

Things are looking very bright at the local field since Henry Duncan bought his new model K Aeronca. More activity is in evidence than ever before. Duncan has forty students regularly taking time, and he was instrumental in selling a Warner powered Curtiss Robin, belonging to O. E. Dickerhoof, of Chanute, to Lee Madewell, and has soloed the following four students: Bob Rigsby, who was the first student to solo the new Aeronca, Dick Elsie, Howard Megredy and Ray Jensen. More power to you, "Hank."

Coffeyville Airways Corporation has purchased another O. X. American Eagle, a sister ship to their "Betsy." The ship was the property of Ross Arbuckle, of Iola, and it has been named "Betsy."

Major Merill K. Reddick, of Hornell, N. Y., who is making a leisurely round-the-world trip in his Taylor Cub, was a recent visitor. The Major is taking his time and thoroughly enjoying himself as he goes, barnstorming his way—when he runs short of funds, he stops at one town long enough to carry the natives interested in viewing their city from the air, or those interested in doing a bit of flying, and thus replenishes his pocketbook. A number of leading Sunday papers are giving Major Reddick considerable publicity on his flight.

Rolley Inman has brought his Ford Tri-Motor back from an extended barnstorming trip, he is barnstorming nearby towns on Sundays with the ship, and reports very good business.

Henry Duncan's Cessna is in Tulsa receiving a 100 hour check by Johnny Armstrong, the Commercial Airport manager. Duncan has just been appointed Aeronca dealer for Southeast Kansas.

Max Walton from Wichita, State distributor for the V-8 powered Arrow Sport, and Glen McConnel, Taylor Cub distributor, from Parsons, have been recent visitors.

A Wiley Post bound for New Jersey, a Department of Commerce Autogiro, headed for Fort Riley, Kansas, and a Tank powered Robin, destination unknown, were in during the month. Other visitors include Major Tom Dawson, from Kansas City, in an Army Falcon, Ray Laher, from Neodesha, in his Aeronca, and Department of Commerce Inspector M. L. Cunningham in a Monocoupe, from Wichita.

Enid, Oklahoma

By Wally Abbott

This past month saw more flying at Woodring Field than has been done for quite a while. With the members of the Woodring Flying Club keeping their Porterfield going almost every day and the members of the Enid Flying Club working to build up that precious 50 hours on their Taylor Cub, the air has indeed been full of airplanes. Roy Holibird, our Flying County Attorney, was probably the busiest man in town. In spite of his many legal duties, he still found time to put in around twenty hours. We are still wondering when he found time to do any sleeping.

On July 31st the Dixie Aces put on an air show and automobile stunt driving at the field. A large crowd was on hand to see the show and were kept entertained all afternoon with some fine flying and some unusual trick driving of stock model automobiles.

Department of Commerce Inspector Alcorn was here on the 15th of the month and reported that all planes were in good shape. He had one complaint however, he thinks that hangars should be air-conditioned. We are inclined to agree with him, as it is no fun climbing all over and under planes in a metal hangar when the thermometer is playing tag with the 110 degree marker.

Visitors to the field included: A. J. Spicer, flying a Beechcraft;

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Carl Winstead in his Cessna; Earl Fields doing some barnstorming in a Stinson U Trimotor; Paul Dahlgreen from the Spartan School of Aeronautics in a Spartan C3-165; Moss Patterson in a Waco; C. E. Clark flying the Lockheed Electra belonging to the Phillips 66 Petroleum Corp.; and Jerry Sass, president of the Oklahoma City Flying Club, in his Stinson Reliant. We hope these boys enjoyed their visit and want to invite them, along with any others who might be by this way to drop in again.

Houston, Texas

By Clyde Foreman

Gene Meador is back with his new Waco and he has all the instruments known and a few more besides. The plane has everything but a waffle iron and Gene is really proud of it. He has made several trips already and reports everything okey.

The field is rather quiet now that all the boys have gone to National Guard encampment at Palacious. However, we hope that they will all enjoy their little stay and judging from the past, we imagine that they will.

Dewey Stewart is back from his vacation in Cheyenne and says that the boys out there can really ride horses. He picked up a few pounds while gone, so we will have to give him credit for catching all the fish he says he did.

Air Activities, Inc., have just completed a sales tour with their new four place Fairchild "24" and report lots of interest in this newest creation of Fairchild.

Several Taylorcraft sales have been made and Ben Bransom and R. E. Cowden have taken the Dallas territory for this line.

J. M. Ferguson, Jr., has sold his ghost and we are wondering what he will fly in next. Speculation is rife and we are getting a little anxious ourselves, to see just what it will be.

From early reports, Houston will be well represented at the Cleveland air races. Several of the boys plan to fly and some are going to drive through. It will, without a doubt, be worth anybody's time and money to go and we hope that they all enjoy the occasion.

The Ranger Engineering Corp. has a factory man in this territory at the present time, modernizing the Ranger engines. Several new developments have been made and the company is passing them on to the customers with no charges attached, all of which makes the customers very happy.

Dude Camden, of Loffland Bros. Co., is flying a Beechcraft while his Waco is being overhauled. He seems to think quite a lot of the Beech and says that the performance is surprising.

Charley Scholes of Galveston is flying for Air Activities, Inc., while vacations are going on. Charley is well known and well liked and we will all hate to see him leave.

The fan mail is still coming in for that certain pilot and although he swears that he doesn't answer all of it, we are beginning to wonder.

The airport ribber is on his vacation and there haven't been any good ribs going on lately. We expect him back about the time the boys get back from camp, and with both sides being so refreshed, there will undoubtedly be some interesting proceedings.

J. M. English has just bought a Fairchild "24" and is getting to be quite a navigator. He has made several trips with pretty good speed and is getting ants to get his license. Says it gets too lonesome by himself.

Bill Moores, Texas Company pilot, is now in Louisiana and Embry Hunt is in Houston. The company just purchased a Wasp powered Stinson and Hunt is pretty busy.

The airport has organized a soft ball team and so far have come out about even. The team is dubbed the Tailskids and are playing in pretty fast company. We understand that they got beat in their last game with the Garden Villa Skunks. No doubt due to the loud atmospheric conditions.

Lafayette, Louisiana

By Horta Jones

Lt. Glynne Jones just returned from a two weeks' business trip to Washington, D. C. While there he visited the offices of the National Aeronautic Association. He was the guest of our "Eh, Las Bas" Congressman, Robert L. Mouton, and with Bob, attended the reception held for the Russian Polar fliers, Gromov, Ymashev and Danilin, at the Russian Embassy. Lt. Jones was particularly impressed by the marvelous progress the N. A. A. is making from National Headquarters throughout the United States.

Left to Right: Lafayette's flying fire chief, Leo J. Gros, and airport manager, Lt. Glynne Jones. Jones is state governor of the N. A. A. for Louisiana. The plane in the background is the fire chief's Lincoln PT.

With much elation, Mrs. Louis Leonpacher returned from a several days' visit to Beaumont, Texas, where she was the guest of Mr. and Mrs. B. F. Edgar. She got a big kick out of flying the Edgar's Warner powered Fleet. While in Beaumont, she visited the airport and saw several of the airport gang. Our mutual friend, Larry Fisher, was especially gracious to our lady bird during her stay in Beaumont. Yours truly learned that the daily stop of the "goon" in that city was one of the main attractions.

A Stinson Reliant, owned by the Gulf Company and flown by Major R. G. Lockwood, visited our airport and remained several days. Major Lockwood was en route to Atlanta, Ga., and on his return he stopped over and remained with us overnight.

Van Lear Leary, of Shreveport, flew in in a new Beechcraft.

The Evangeline Chapter of the N. A. A. held its first anniversary meet at the Oak Avenue Cafe, July 29th. Joe Joseph, proprietor and member of the Chapter, was the host and served a delicious chicken dinner following the meeting. Mr. Charles "Frenchie" Fortun was the guest speaker of the evening. He especially emphasized the fact that to strive in any enterprise, complete cooperation was the essential factor.

Well, folks, our airport is boasting of a telephone—finally. The number is 738. Whenever you desire local aviation information or weather reports, just give us a buzz.

Irwin Richardson drives in every week-end from Houma, La., to do some flitting. He is working towards his amateur license. The "Missus" accompanies him, and, boys, she is really some "beebee."

The location of the new hangar has at last been decided upon, and the Henderson Construction Company is already at work driving the stakes.

Miami, Florida

By Karl E. Voelter

The Naval Air Base at Miami has been the scene of almost continuous activity for the past several months. Practically all of Pan American's pilots are either Navy or Marine Corps Reserve officers, and each summer finds many groups going through active duty periods. As this is being written, VO-4-MR, Miami's crack Marine Corps group is finishing up a very active tour of duty with eleven officers as well as a large complement of enlisted men participating in a strenuous program of aerial gunnery, dive bombing and tactical maneuvers. Some of Miami's best known pilots are officers in this group.

Miami, spurred by the active efforts of State Aviation Director Herbert C. Whitney, has recently waged a war against unlicensed airplanes and pilots within her midst, and, sponsored by City Aviation Director Al Hansen all unlicensed craft in and near Miami has been ordered grounded. The law against unlicensed aircraft has been on the Florida

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statutes since 1929, but until very recently was never enforced.

A new airplane sales agency for the distribution of Fairchild Airplanes has been formed in Miami. The new company, known as the Florida Fairchild Sales Agency, is headed by Karl Voelter and George Bunnell, Jr., the latter until recently a Sportsman Pilot. Karl Voelter is one of Miami's old timers and is the Aeronca distributor for most of Florida, and operates his own outfit on Miami Municipal Airport. One of the new 4 place Warner powered DeLuxe jobs has been ordered for delivery as soon as possible.

Annette Gipson, well known aviatrix of New York and Miami is honeymooning in Europe, but states she soon will return to Miami where she recently took over a large citrus grove, which in her spare moments not occupied in flying her classy Monocoupe claims most of her time.

Joe Marrs of Miami who recently purchased the one and only all-metal Stinson from Bill Swisher has resold the airplane to a representative of the Dominican Republic who plans to fly the ship to Santa Domingo within the very near future. Marrs will accompany the ship as far as Havana where it will be turned over to its new owner. The plane's new owner on his checkout flight rightfully remarked, "She is veree nice ship but she land veree, veree fast."

"Rusty" Heard of Voelter's staff plans to ferry Larry Hughes' Speedwing Laird to Cincinnati next time he goes up for a new Aeronca which will be soon. Larry has been knocking around the country in his new Lockheed "12" but 'tis stated he hasn't quite gone back on the Laird.

J. V. "Jerry" Dack, old time engineer-pilot of Miami has just finished conditioning a 4 place Bird which will be shipped to Columbia, South America. The ship is owned by a Miami group of business men who will operate it on business near Columbia. Before Jerry goes south he will pick up a Ford freighter in Seattle which he will fly to Columbia.

New Orleans, Louisiana

Entirely built by students 16 to 18 years old, the Delgado Flash may prove to be one of the most sensational planes of the National Air Races, Cleveland Airport, September 3 to 6, inclusive.

With the late Huey S. Long as their Patron Saint, these students of the Delgado Trade School, New Orleans, began several years ago the construction of racing planes. The work was started and has been carried on under the supervision of Byron S. Armstrong, former Navy pilot, aeronautical engineer, and designer of some of the Schneider Cup racers.

In 1935 and 1936 misfortune overtook these ships before they could get away from the starting line at the National Air Races. Last year's product, the Delgado Maid, was burned due to motor trouble a few days before the race meet opened at Los Angeles, but not before its speed trails had shown that the plane had phenomenal speed, close to 400 miles per hour.

The Delgado Flash, the 1937 entry, is a reproduction of the ill-fated Delgado Maid but is powered this year with a big Menasco in-line motor. The plane will be brought to Cleveland and serviced during the races by the students. If it is anything like as fast as its predecessor the boys may take back to New Orleans with them a big part of the $82,000 prize money put up this year for the speed events, which will be used to continue their aviation work.

Orlando, Florida

By Ed Nilson

The Orlando Municipal Airport's development under our master airport plans is showing rapid progress. When finished the runways will be 5,000 feet NW-SE, 5,000 feet NE-SW, 4,000 feet N-S and 3400 feet E-W. Plans call for a modern administration building and two extra large modern hangars, elaborate landscaping and beautification. Eastern Air Line schedules will be inaugurated as soon as temporary extensions to the east and northeast are completed, giving Orlando immediate connection with all major U. S. and foreign airlines.

Two new distributorships have recently established fixed base operations here. Hangar facilities are over-taxed with fiftteen to twenty ships all the time. Private air travel is way above normal with a large percentage of it going over the St. Johns-Valley private airway from Jacksonville here. We boast more airports over this route than any other of equal distance—14 airports over the 135 mile route.

Student operations are growing by leaps and bounds. Approved instructors are making great headway under our newly adopted rigid student training regulations and approved curriculum. Although there has been a great deal of fear and criticism of such regulation of instruction by local authority, this method has been a boon to flight training here locally and we invite the entire industry to see how successfully the system works.

We have initiated work on plans for the next winter Sixth Annual Sportsman and Private Fliers Orlando Air Party to include entertainments at Rancho, Dr. Phillips' and Mount Plymouth. Everybody is coming—as usual.

Patterson, Louisiana

By Horta Jones

Eddie Robertson, former factory superintendent of the Wedell-Williams Air Service Corporation, has been recently appointed Airport Manager of the Patterson Airport. He has full charge of the airport and machine shop maintained there. It was under Eddie's supervision that the famous "44," "45," "92," and "22" and other racers were built. These ships held the straight-of-way record and 100-Km. record for land planes. Besides the part he played in the construction of these planes he was also in charge of the maintenance of the Wedell-Williams airliners and general airport activities. The field is now available for day or night landings, as it is furnished with lights for night landings. Fuel is also available at all times.

San Antonio, Texas

By Greg Moore

There has been a decided increase in flying activity here this past month, and aviation is on the upgrade. Now that Braniff is using their big Douglases on the run to Brownsville a goodly crowd gathers to watch the evening plane land. It is quite impressive to see the big ship slide into the field just about dark. The field lights are a big help, and there is a public address speaker in the control tower to direct traffic.

P. H. Hebert of Hangar Six returned the first part of the month from the Taylor Aircraft Factory with a new ship. He flew the 1549 air miles in 24 hours elapsed time in the course of which he made 17 landings and takeoffs. This little ship averaged a little better than 23 miles to the gallon of gas.

Hangar Six also reports the sale of five Taylor Cubs in two days, which is a record of some sort. Two were sold in Corpus Christi, one went to the More Flying Service of Corpus Christi, one to E. M. Strieber of Austin and the fifth to a local flying enthusiast.

Leland Long, of Hangar Six took delivery this month of a new Stinson fitted out for ambulance work. This is the first Stinson ambulance in this part of the state and Hargar Six can be justly proud of it. Equipped with all the instruments required for every sort of flying it is the last word. It has a very neat arrangement for the patient and also has room for an attendant.

From New York comes word that Col. Lapham of Hangar Six uses a Taylor Cub to commute between his home in New Canaan, Conn., and his office in New York City.

Adrian Hines, who purchased an Aeronca from United Aero, flew it to his camp on Matagorda Island in company with Al Tuerpe. They were looking over possible emergency fields between Stinson Field and the Island and had landed in a pasture when they were suddenly charged by a number of wild cattle. Fortunately the little ship got off in a hurry with no damage done. Lucky for Hines and Tuerpe.

Gene Meador, Houston and San Antonio automobile dealer, returned from the Waco factory with his new deluxe cabin job. It has every sort of flying instrument you could imagine, including a radio direction finder. Painted a bright red it is an imposing looking job and, according to Dick Hair, who accompanied Meador, flies better than it looks.

The big event of the month took place on the 25th, when 14 ships left this field for Corpus Christi to attend the opening of the new runway at the Corpus Field. From United Aero went Mr. and Mrs. A. G. Holloway, Ed. Smith and Robt. Nuckolls, Geo. Vordembaum and his cousin, Gabriel French and Wm. Carsow, Ab. San Miguel and

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Stewart Harris. They all flew Aeroncas. Hangar Six was represented by G. B. Moore and P. H. Hebert in a Rearwin, Mr. and Mrs. Wm. Beck in Bill's Taylor Cub, Harold King and Robert Crea, Albert Utz and R. N. Rowland also flew Taylor Cubs. Cliff Thompson flew Mrs. Utz, Mrs. Fred Harman, Lorretta Wolf, and Robt. Brown in the new Stinson. Marlin Fischer flew Paul Laberto, Mr. Saul Wolf and his son in Hangar Six Waco. Louis Yates, Dr. Merton Minter, and Carl Walrath flew in Yates' Fairchild.

From Modern Air Travel went Rodney DeLange and a guest in his Custom Waco, and Frank Eng and Kay Williams in an Aeronca.

We were met at the Corpus field by a reception committee and taken into town for breakfast. Following breakfast we were taken for a boat ride around the bay and around through the ship channel. After lunch there was a short dedication program followed by some exhibition flying by the local pilots. All in all it was a very swell trip and one to be remembered by those who went. The weather was perfect and our hosts deserve a lot of credit for putting on a bang up show.

Savannah, Georgia

By Lydia Muse

The following students soloed at Strachan Skyways during the past month: Steve Sennett, Max Griffith and Henry Coleman.

Several new students enrolled, and the Cub, Aeronca and Great Lakes kept pretty busy. Flying bug is biting.

Wallace Sheffield, of Americus, Ga., was a recent visitor.

Ralph Lockwood, of the Gulf Oil Company, was in on a trial mail flight test to smaller cities in Georgia.

Mr. Wallace, of the Fairchild Airplane Company, was a recent visitor, with a new Ranger Fairchild, and several prospective customers were given trial flights.

Strachan Skyways are now using a trimotor for flights over Savannah and Savannah Beach.

Sonny Seaman, of Atlanta, flying a Waco Cabin arrived and stayed one afternoon, accompanied by three Emory University students. He was met at the field by Mr. Lamas, who was a student of Mr. Seaman for the past season at Emory University.

N. A. A. Savannah Chapter is having a dinner dance Friday, August 6th, at the DeSoto Hotel.

Dr. Hodge recently completed a major overhaul of his Monocoupe. Engine overhauled by Lambert factory, and Aircraft by Strachan Skyways. He is a very busy flier these days.

Frank Hulse, of Augusta, Ga., made a visit here.

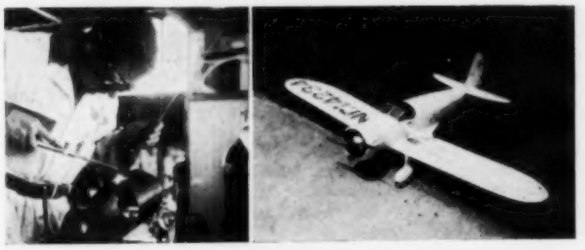
Springfield, Missouri

By Knote A. Pileit

In order to place the airport firmly on its feet and also to make the local operators feel that there is a Santa Claus, even if he does make his appearance in the heat and dust; the Springfield Park Board, owners and operators of the Springfield Municipal Airport, installed a new and entirely modern repair shop and placed it in charge of a licensed A. & E. mechanic. The repair shop is not looked upon as a money-making venture but more as a service made available for the convenience of the local operators. Only ships based at the field will enjoy the special privileges offered by the repair shop. No work will be solicited, but any work that can be handled will be done for transients, at regular prices. The Park Board has employed Robert W. Perry, holder of License No. 13759, and formerly employed at Bredouw-Hilliard, Municipal Airport, Kansas City, Missouri, as head mechanic for the shop. Two additional student mechanics work under him. The head mechanic is paid full time salary regardless of the amount of work to be done in the shop, and in addition, takes care of all servicing and the movement of planes on the ground. In this way, the Park Board has been able to give the airport the services of a mechanic at only a little more expense than they were paying for an attendant to take care of servicing the ships. Also, by paying the mechanic a full salary and not placing the repair shop on a percentage basis, the Park Board feels that they have given the operators a break in the way of good work and dependable service, every month in the year.

All equipment was purchased new by the Park Board and particular pains were taken to see that the equipment was complete in every detail for the work to be done. As a result, it is felt that the repair shop is as completely equipped as any in the Southwest, for the work the shop is expected to turn out. At any rate, the opening of the repair shop was a red-letter day at the airport and it would bring joy to the heart of any airman to notice the smiles and looks of joy on the faces of the local operators when they see their work being done at the local field, with the very best of equipment and workmanship, as and when such work is necessary.

Operations statement on the repair shop for the months of June and July, show an even break, which is, after all, more than the Park Board expected. Now that they have broken the ice and have their feet wet on the proposition, the Park Board expects to give the repair shop full-hearted coperation and support at all times in order to keep it an outstanding feature of the airport.



Activity at Springfield

Left: Welder at work in the newly installed modern repair shop at the Springfield, Missouri, municipal airport. Established by the city, no work will be solicited but transients may benefit by the shop at regular prices. It is primarily a non-profit service institution and headed by Robert W. Perry, well known repairman, who formerly was with Bredouw-Hilliard.

Right: One of the most popular ships on the field is the Kinner Sportwing belonging to James C. Gillespie, prominent Missouri rancher.

James C. Gillespie, of Bright Elbow Ranch, Cedar Creek, Missouri, has added a new type ship to the field. On July 14th, Jim flew in at the port with a Kinner Sport Wing and has been putting in considerable practice for he expects to go up for his private license the 17th of this month. He has in the past held a commercial license but let it lapse about two years ago. Jim is not a stranger at the field for in '32 he based a Stinson Jr. here. Owning a large cattle ranch on the White River near the Arkansas line and living in Springfield, Missouri, offered quiet a problem as to transportation; so Jim decided the real solution to the problem was to buy an airplane and only spends some 40 minutes between points. He has constructed a hangar for his plane at the ranch and fixed up one of his river bottom fields for an airport. All indications point to Jim being an extremely active pilot at the field and some of the pilots are already planning on dropping in at Jim's ranch and paying their respects.

Riley Moffett is the new holder of the solo record at the local airport. Three hours and fifteen minutes is the new record. Riley had one hour and fifteen minutes on a J 6-5 Commandaire, over six months ago. This past month Instructor "Duke" Trowbridge gave him two hours on an Aeronca C-3 and Riley took to the air, alone, like a veteran. Since then he has piled up several solo hours and he has never had an occasion to fall back on his instructor for additional instruction.

The Park Board is promising additional improvements at the airport before winter sets in. Improvements will include construction of an addition to house a new steam heating plant at the hangar, construction of a new airport manager's office and pilots lounge, hard surfacing around the hangar and an apron at the east end of the hangar. They are also planning on considerable field work. A new tractor will be purchased for this work as well as grading equipment, the tractor will have a power mower attachment for cutting grass during the summer months. All in all, things are looking up at the airport and if the increase in ships keeps step with the improvements, the local airport is going to get back on the air map in short order.

Tampa, Florida

By Sidney C. Brown

Commercial aviation seems to be holding the fore-front of activity in Tampa at the present time, what with the National Airlines now operating off of the new combination land and sea plane base, Peter O. Knight Airport, with six arrivals and departures each day, including two round trips to Daytona Beach, and one to Miami and three round trips to St. Petersburg. It is noteworthy that the course flown between Tampa and St. Petersburg is over the route of Tony Janus who inaugurated the first commercial scheduled airline in the world in 1914. With the new schedules and mail contracts the National Airlines has increased its personnel to keep pace with the new volume of business which has resulted. Two of the new members of the staff were taken from the ranks of the N. A. A. and Floridair Club membership, both having been instrumental in civic aviation development for the past several years. Walter M. Cridlebaugh has joined the maintenance staff at St. Petersburg and F. Herbert Coune has been made assistant to R. E. Burritt at the Tampa traffic office. The temporary ticket office and waiting room has been installed in the hangar pending completion of the beautiful Tony Janus Memorial Administration Building, which was designed by M. Leo Elliott. Automobile traffic to the airport is becoming very heavy around plane time because of the proximity of the airport, which is within the city limits and less than three miles from the city hall. Coune reports that some folks even get up to meet the 6:25 a. m. ship.

The annual election of the Floridair Club was held at Drew Field Sunday afternoon, August 1st. Clyde Hall was reelected president, Loauis Milam reelected vice-president and F. H. Coune named secretary-treasurer. The Rearwin has over 600 hours on it now and the last payment is being made. Jack Walden has taken over the maintenance work and the old leBlond is turning up smoothly.

The aviation ground school, being sponsored in Tampa by the Junior

Chamber, is meeting with good response, 188 have enrolled. C. R. Coachman, state supervisor for Aeronautical Education of the W. P. A., has transferred David Yeoman, of Bradenton, to take charge of the school, replacing Coune, who resigned to join National Airlines.

W. D. Gunn, commercial representative of the Railway Express Company, reports receipt of a shipment of special hybiscus cuttings for the estate (in Sarasota) of Ralph C. Caples, of the Caples Advertising Agency, of Chicago, from Honolulu in four days.

Jerry Waterman, vice-president of Tampa Chapter N. A. A. and chairman of the aviation committee of the Chamber of Commerce, has just returned from camp looking fit and spry with the report that he flew over six hours in army ships in addition to his duties as Captain at Camp Beauregard.

West Palm Beach, Florida

By Art Keil

Six flying fishermen, most of them writers, winged out of Chicago one Thursday noon, bound for the Sailfishing Grounds at West Palm Beach where they hoped to prove to the satisfaction of Windy City readers that they could become big game fishermen in a single week end.

Representatives of three newspapers, a former outdoor editor graduated to the "class" magazines, sports editor of a string of trade magazines and the salt water tackle man from a Chicago sports store were aboard the Eastern Air liner as guests of the line. Only one had ever caught a Sailfish before and he had taken an eight-footer at West Palm Beach. He stepped off the plane wearing the gold button he won from the West Palm Beach Fishing Club for that little feat.

In their lake front rooms at the George Washington hotel, they were, without exception, amazed at the lack of mosquito netting, fans and other tropical paraphernalia they had imagined was a part of the summer scene in South Florida. Instead they found the usual trade wind straightening out the curtains and calling for light covers on the beds. The thermometer went down to 78 degrees as an accommodation to the local hosts.

Ten minutes after leaving the hotel Friday morning they had four Sailfish lines out from Capt. Eddie Dowling's cruiser "Marlin," trolling along about four miles an hour on the edge of the Stream in the "sailfish sector of the Gulf Stream."

First strike went to Don Hough, whose most recent story was published in Saturday Evening Post. The Sailfish, it may be explained, with its long bill, raps the bait for the kill and then drops back and waits to see if his prey is dead and ready for eating. Hough failed to release the drag on his reel quickly enough to drop the bait back as though dead. Mr. Sailfish became suspicious and went on about his business.

Two more strikes went the same way, but for variety several dolphin obligingly hooked themselves. In late afternoon the striker (Captain's assistant in Chicago language or the co-pilot as 'twer) saw a Sailfish leaping off the port bow and the cruiser was stepped up to a position in front of his line of flight. Within three minutes he had struck the bait of Maurice Fischer, Chicago Daily News, and was carefully hooked. Fischer's fish put up a 20 minute battle of jumps and runs while Art Houlberg, Chicago hotel publications and owner of the Sailfish Gold button, attempted to Graflex both of them. He shot Fischer but the fish was too fast. Brought aboard, the "Sail" was found to be uninjured by the battle, and was promptly released, as are a great majority of the 3,000 Sailfish taken in these waters each year.

G. L. Tracy of Von Legerke and Antoine Sporting Goods Company, picked up a barracuda the next day out; Don Sessions of the Chicago Herald and Examiner had to be content with a dolphin and "Chum" Woodard of the Chicago Evening American was seasick. All had been introduced to big game fishing and were back at their desks Monday morning.

West Palm Beach, Florida, is a mecca for flying fishermen. Here are some of the big game anglers who are departing Morrison Field for Chicago after a week-end of big catches off the Florida coast near West Palm Beach. Left to Right: Art Keil, West Palm Beach host; Art Houlberg, Chicago Publications; Gordon Sessions, Chicago Herald & Examiner; Maurice Fischer, Chicago Daily News; G. L. Tracy, Von Legerke & Antoine Sporting Goods Company; J. T. Potter, Eastern Air Lines local agent.

Wichita, Kansas

By Creighton Merrell

A determined fight is being waged by the Wichita Chamber of Commerce and local aviation officials to insure that Wichita shall receive her just due in air mail service. Marcellus Murdock, chairman of the chamber of commerce aviation committee, and Roy Elliot, chairman of the air mail sub-committee, are leading the battle.

First difficulties arose a short time ago when TWA elected to cancel the 1:00 a. m. stop of east and west bound planes. This means that letters which are not posted before 4:50 in the afternoon must be held for the 9:00 a. m. plane the following day for west bound service. East bound mail must be posted by 6:30 to leave on the early evening plane. To date a ten per cent drop in air mail poundage has resulted from this curtailment of service.

One excuse for canceling the night stops was that the local airport does not have hard surfaced runways. Plans have for some time been discussed concerning this important improvement. At the present time considerable hope is being placed in the Dingel bill in congress which provides for participation by the federal government with cities in sharing the cost of new construction and improvement of airports.

Action is also being taken through the Kansas congressional delegation to petition the post office department to restore the valuable night service.

Andy Swenson heads another air mail committee which is working to establish a Denver, Pueblo, and Wichita air mail branch. This is a four year effort which has recently been brought to head. Most serious obstacle to efforts now is the recent bid of Kansas City to ditch the Wichita plan in favor of a Denver to Kansas City service.

Jack Jackson, 20 year old welder for the Beech Aircraft Corporation, recently fulfilled his heart's desire by making a 4,000 foot parachute jump "just for the fun of it." With no spectators to cheer his daring save a few farmers at choring time, Jack leaped into space and made a 1,200 foot delay before pulling the rip cord of his Switlik parachute. It was truly a masterful exhibit for a first jump and Jack very cooly explains that the most dangerous part of it all occurred when he landed in a field of man eating mosquitoes. He is also taking flight instruction with the Bill Vacin Flying School and eventually will have the inside dope on all phases of aviation.

The jump was made from a Stinson monoplane flown by Morris Brooker and instruction and arrangements were made by the Merrell Parachute Sales and Service.

As an aid to paging airline passengers quickly and conveniently, a public address system will soon be installed in the administration building at the municipal airport. According to Alfred MacDonald, director of city parks, microphones will be placed in the TWA, Braniff, airport offices and at the end of the loading canopy. Speakers will be placed in the restaurant, and men's and women's rest rooms. Later the system will be enlarged for use on programs at the airport.

There is no question but that this service will be of immense help to the airlines. Usually every stop finds airway officials running about in wild confusion trying to get passengers on the plane for a scheduled start. Wasted minutes at stops damage schedules too much to be ignored and it is likely that other airports will follow Wichita's lead in the future in providing this aid.

A tentative schedule and time has already been outlined for a 1937 All-Kansas air tour. The tour will be under the auspices of the Wichita Aviation Club and will be staged September 23, 24, 25, and 26. Plans are being drawn by Horace Huntsbarger, president of the club and a committee composed of Charles Lander, Orville Sheffer, Bill Vacin, and M. C. Brooker.

A route which will require more than 1,000 miles of flying has been planned which will take the planes to Ponca City, Bartlesville, Woodward, Enid, and Blackwell as well as Kansas cities. The tour will close on Sunday with an air show to be presented at the municipal airport at Wichita.

Sunday afternoon airport visitors were given a real thrill recently when Dick Merrill and Jack Lambie set their Lockheed monoplane down on the field and spent the night in the city. They made the stop enroute to New York to take up their duties flying on the Newark-Miami run of the Eastern Airlines, after completing a moving picture in Hollywood entitled, "Atlantic Flight."

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Snow Static

(Continued from Page 12)

normally be avoided, and this particular flight represents an extreme case. It does appear, however, that the anti-static loops must be coordinated with discharging systems and meteorological guidance if a complete solution is to be obtained.

It seems that the advantage of the metallically shielded loops lies in their metal covering. An experimental, wooden nose was installed on the plane, and covered with copper foil. The foil was cut at suitable points to make a Faraday shield. An unshielded loop in this nose gave practically the same results as the loops with the metal immediately surrounding the wire. The loop in the tear drop housing gave practically the same results as the nose ring or metallically covered loop on the plane belly. The nose ring loop was usually about 5 per cent better than the loop on the plane belly, probably because it was farther forward. A low impedance metallic loop with an impedance-matching network gave the same results as a high impedance of the same metallically covered construction. The wooden nose without copper foil was painted with a mixture of dope and graphite so that it had an average resistance of 20,000 ohms to the plane structure. Signal pick-up dropped about 15 per cent for loops inside this nose. No change in snow-static advantage occurred. An unshielded loop in this nose suffered from snow-static, while a metallically covered loop in the same place gave the usual advantage. Position about the nose of the plane seemed to have very little bearing on the snow-static effects.

Any insulated surfaces such as windshield, de-icers and non-metallic loop housings can charge up with respect to the plane. When the charge on them becomes high and the plane suddenly flies into a higher or lower charged cloud area, these insulated surfaces will spark to the plane structure. Painting the loop housing with dope and graphite stops this source of noise. If, however, the plane flies through an icing area, an ice cap will form on top of the graphite paint. This ice cap is an insulator which charges up and sparks over in the same manner as the insulated surface. Thus in ice, the special paint does not accomplish its purpose. The answer is to streamline loop housings so that ice does not form.

Our work with the loops gave rise to considerable speculation as to why a shielded loop attenuated the corona radiation and an unshilded loop did not. Four theories have been advanced, but none have been carried far enough to date to warrant discussion here. All, however, must consider that the wave front of the interference is exceedingly steep as compared to that of the beacon signal. Dr. O'Day is working on a mathematical approach to the problem, which we hope will clear up this peculiarity. Once it is understood, the way may be open to a new type of antenna which does not have the disadvantages of the loop.

The loop type of beacon antenna has no cone of silence, and is practically "unflyable" when within 5 miles of a loop type DOC radio range. To overcome this, we might assume that we can always change over to the regular antenna when close to the station so that a normal cone of silence can be obtained. It is assumed that the range signal will override the snow-static when close in. Actually, however, we have records of a number of cases where the static directly over the range station was strong enough to make changing over impossible since even the loop was unable to receive through the static.

Our experience in dust storms was limited to only a few minutes, and no practical tests were made. We believe that it is safe to assume that dust static will operate in about the same way as snow-static, since it would produce the same type of corona discharge phenomena.

In closing this paper, I wish to express our appreciation of the assistance, advice and loan of equipment which made this work possible. A number of men gave of their time without compensation, and the manufacturers their personnel and equipment without hope of remuneration.

Decade of Air Transportation

(Continued from Page 7)

there started a steady forward movement along technical lines that was soon to establish the United States air transport system as foremost the world over in operating excellence. The first development was plane-to-ground voice radio, a project which was sponsored and developed by United Air Lines. Next came the directional radio beam which supplemented voice-radio to increase navigational efficiency. Instruments were perfected rapidly to expedite the change from the "art" of flying to the "science" of flying. This development program included such instruments and advances as the artificial horizon, directional gyro, automatic "robot" pilot, constant speed propeller and automatic mixture control.

This need for improved equipment brought about the Boeing 80-A, a fourteen passenger, trimotored biplane. This ship, the largest airliner in service during the period it was operating from 1930 to 1933, was the type of plane that United Air Lines used to pioneer the flying of passengers on long distance night schedules. When the Boeing 80-As were introduced on the Chicago-San Francisco airway, a fleet of trimotored Fords, carrying twelve passengers, were placed in service by National Air Transport between New York and Chicago.

Another step forward was taken in 1931 with the operating divisions of UAL being united. With this, the company launched a re-equipment program that was destined to make air transportation history. This resulted in the design and construction of sixty Boeing Model 247s which set the present high speed twin-engined pace. Schedules were inaugurated in 1933.

As United's tenth birthday approached, the company is completing still another re-equipment program that features Douglas-built DC-3 Mainliners. Overnight sleepers fly from the Atlantic to the Pacific without the loss of business hours. The Mainliners fleet also includes fourteen passenger Skylounges and twenty-one passengers club planes. In the not too distant future, four-motored transports will be introduced. Already engineers of United Air Lines are busy shaping plans to inaugurate schedules with these giant forty-passenger airliners.

In personnel, as well as planes, United has recorded an outstanding progress during the past decade, particularly from the standpoint of experience and efficiency. United's present roster of 1800 employees is unexcelled, for it includes many who made their air transport debut during the early days of Postoffice Department flying and who are ten year veterans of United Air Lines service.

A summary of United Air Lines traffic during the past ten years follows:

Miles flown	120,209,435
Revenue passengers carried	1,075,359
Revenue passengers miles	450,862,210
Pounds of air mail	42,357,951
Pounds of air express	8,039,927

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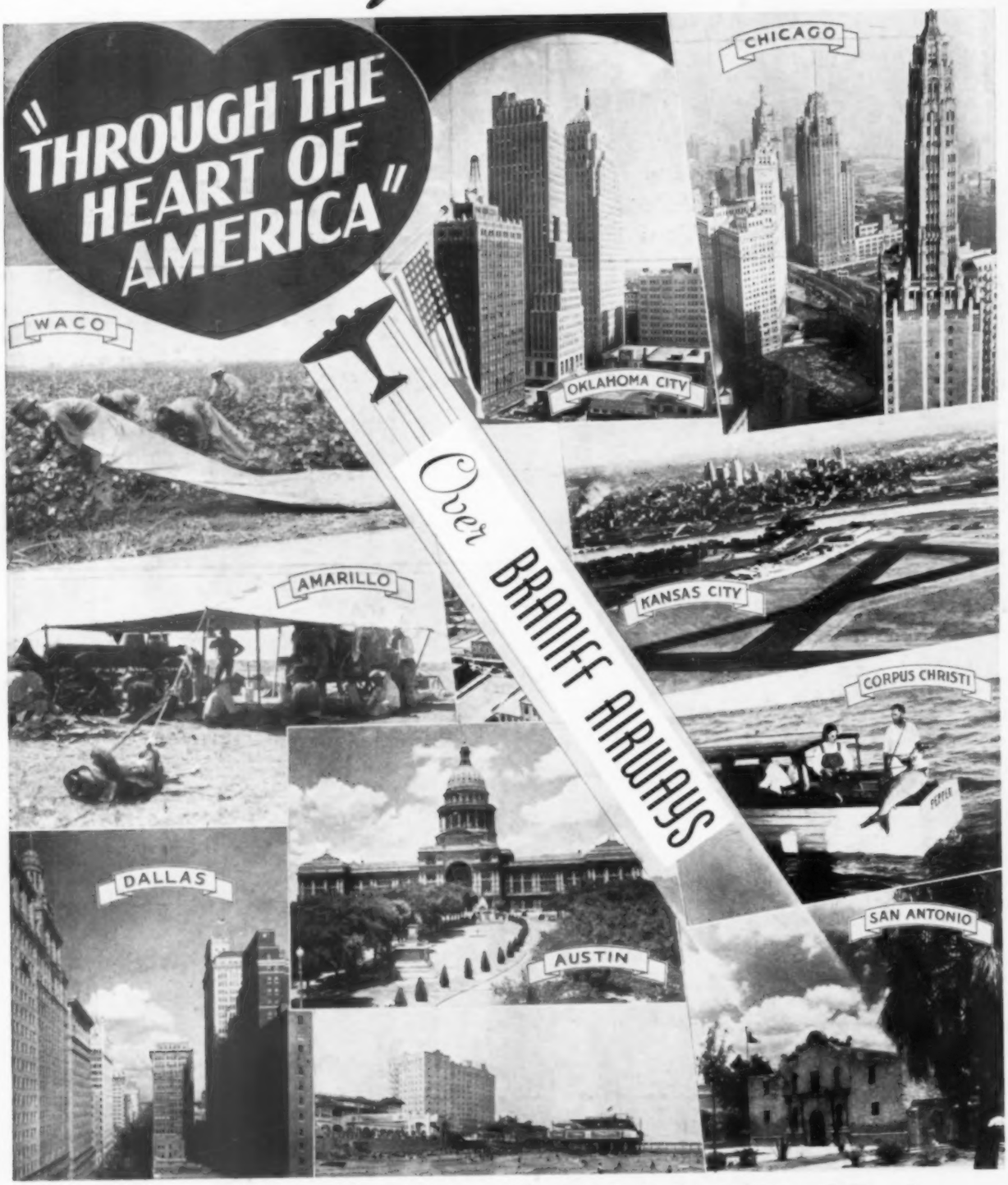

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